2010012

REF PROJECT APPLICATION
FY 2009

FOR: SEHSR Tier II EIS, Richmond to Raleigh
BY: North Carolina Department of Transportation

(Note: This application was originally submitted in January of 2008 and was approved by the appropriate parties. As of this date the grant agreement has not been finalized)

Originally Compiled by: David B. Foster, PE, CPM - NCDOT Rail Division
January 2008
Resubmitted: February, 2009

DRPT
Virginia Department of Rail and Public Transportation
The Smartest Distance Between Two Points

Rail Enhancement Fund
Project Application Form

Internal Use
DRPT Tracking #

Date: **February 2, 2009**
(orig. Jan. 23, 2008)

A. Name of Applicant (Name and Address)

North Carolina Department of Transportation
Attention: Rail Division
1553 MSC

Raleigh, NC 27699-1553

Applicant type:
__ Passenger Railroad
__ Freight Railroad
__ Locality
__ Business
X Other _**State Department of Transportation**

B. Contact Information:

Responsible Person/Title: **Patrick Simmons, Director, NCDOT Rail Division**

Telephone: **919-733-7245 x 263** Fax: **919-715-6580** Email: **pbsimmons@dot.state.nc.us**

Project Manager/Title: **David B. Foster, PE, Rail Environmental Programs Manager**

Telephone: **919-733-7245 x 266** Fax: **919-715-6580** Email: **dbfoster@dot.state.nc.us**

C. Project Title: Southeast High Speed Rail Tier II EIS, Richmond to Raleigh

D. Project Location: (City/County, Rail line, Railroad Mile Post, attach map)

Richmond Main Street Station, down the S-line to Centralia, then following the A-line to Dunlop (Chesterfield County and Colonial Heights), then multiple options through Petersburg to Collier Yard, approximately milepost A-29, then west across the Burgess connector to the old S-line at MP 30, and following the old S-line through Dinwiddie, Brunswick and Mecklenburg Counties in VA, and through Warren, Vance, Franklin and Wake Counties in NC to the Boylan Wye in downtown Raleigh, NC.

E. Owner of Property/Right-of-Way/Facility/Personal Property: to be determined

F. Responsible Party for Continuous Maintenance of Project: to be determined

G. Project Information:

1) Description of Project:

Completion of the Draft and Final Tier II Environmental Impact Statement (EIS) and Record of Decision (ROD) for railway and associated highway design in the corridor from Richmond Main Street Station to the downtown area of Raleigh, NC (approx. 162 rail miles, 95 in VA and 67 in NC).

2) Project Objective:

Satisfy the requirements of the National Environmental Protection Act (NEPA) for the use of public funds to restore and improve passenger and freight rail service in this important transportation corridor, through incremental improvements utilizing existing rail rights of ways as much as possible. The design will allow a maximum authorized speed of 110 mph for passenger trains and 70 mph for inter-modal freight trains, both using fossil fuel locomotion on conventional tracks with concrete ties. The design also seeks to grade separate rail and highway crossings as much as possible for the safety and long term operational benefits of the system. This environmental document includes the associated highway design work along with the railroad design work in order to insure the long term efficiency and effectiveness of the system and also to qualify for all future federal funding.

3) Relationship to Other Projects under Development by Applicant or Previously Funded by this Program:

The Draft EIS for this corridor received previous funds through the REF, this is the continuation and completion of that earlier work as required by the NEPA process.

4) Describe the Public Benefit of Project. Identify significant types of benefits and beneficiaries from this project. (See Attachment A)

-Provide the traveling public, particularly special need populations such as the elderly and the disabled, with improved transportation choices in this corridor;
-Help ease existing and future congestion (air, highway, passenger and freight rail) for people and freight movement within the corridor;
-Improve safety and energy effectiveness within this regional transportation corridor;
-Reduce the overall air quality related emissions per passenger mile traveled within the corridor and for the movement of freight within the corridor;
-Improve the overall transportation efficiency within the corridor through a more balanced movement of people and goods via railways, highways, and airways, with a minimum of environmental impact.

5) Attachment A – Project Data Information Form - See attached

H. Type of Project:

1) __ New Construction __ Rehabilitation __Study

2) __ Rail Infrastructure __ Rail Facility/Station
__Equipment/Rolling Stock __Signals/Communication Equipment

3) Other **Environmental Impact Statement**

I. Application Scope of Work Covers:

__ Entire Project **X** A Phase of a Multi-Phase Project __ Completion Phase

J. Project Budget Summary:

Preliminary Engineering	$ **1,450,701.43**
Environmental Evaluation	$ **2,098,786.62**
Design Engineering	_____
Right of Way Acquisition	_____
Construction	_____
Construction Management	_____
Lease/Acquisition of Equipment	_____
Public Involvement (if applicable)	_____
Other Contingency	$ **425,511.95**
Subtotal Project Budget	$ **3,975,000**
Total Project Budget	$ **3,975,000**

K. Attach detailed budget and schedule information. If the project is for final design, construction or procurement; then plans, specifications and reports to a preliminary engineering level (approximately 30%) should be provided to support the project cost and major features (if applicable). A sample budget and schedule is included in Appendix D.

L. Rail Enhancement Funds Requested in this Application: $ **2,345,250**
Maximum 70% of Total Project Budget. Do not include any previous allocations or future phases.

M. Local Match Required by Applicant: $ **1,629,750**
At least a minimum 30% of Total Project Budget

If Overmatch, Provide Percentage 19 %

1) Match Breakdown by Source (Including any in-kind match)

a. Provider of Local Match **North Carolina Department of Transportation**

b. Status (confirmed/anticipated) **confirmed**

c. Attach justification for value of in-kind match.

2) Other Funding Sources Beyond Match Requirement

a. Provider of Overmatch **Not Applicable**

b. Status (confirmed/anticipated) **Not Applicable**

N. Project implementation schedule (based in months). List major milestones of the project, including environmental review and public involvement points if applicable.

- May 14, 2010- completion of the Draft EIS, then
- August 15, 2010- completion of public hearings along the corridor for the Draft EIS, then
- October 11, 2011- completion of Recommendation Report and Final EIS, then
- Dec. 31, 2011- completion of the Record of Decision

O. Statement of how this project promotes or does not preclude dual/multi-access use.

This environmental review clears the way for use of federal and state monies to build a critical section of the federally designated high speed rail corridor for the East Coast. It will allow multiple users in the following formats:
-high speed passenger service with operations open to competition for certain segments (i.e. Amtrak may provide some service, with additional trains operated by other providers between specific city pairs within the corridor
-conventional passenger service, again with certain trains operated by Amtrak and others
-commuter passenger service open to competition in the more urbanized portions of the corridor
-intermodal freight open to competition and leasing options
-local freight access, again open to competition and leasing options

P. List additional users of rail line, facility, and/or equipment.

-potentially Amtrak, CSX, NS, state sponsored trains, private operators such as Hertzog, and short line railroads operating across and along certain portions of the corridor, as well as commuter operators

Q. Identify any possible environmental or other issues/concerns within the scope of this project.

-primary concerns relate to the human environment with potential impacts to cultural resources, and noise/vibration

Application and Attachment Certification

To the best of my knowledge all information contained in this application and its attachments is true. The information provided to the Virginia Department of Rail and Public Transportation (DRPT) is subject to full disclosure except where protected by Virginia Code. Any additional documentation related to this application will be provided to DRPT upon request.

Authorized Signature and Title:

Director, NCDOT - Rail

Date: 2.2.9

Required Attachments:

1. **Attachment A - Project Data Information Form, see attached**
2. **Attachment B - Application Checklist, see attached**
3. **Detailed schedule, cost, and budget, see attached**
4. **Certification of Match:**

   Applicant certifies that the appropriate match money is committed to this project for said project purposes

5. **Certification of Additive Investment:**

   Applicant certifies that completion of this project will accelerate rail investment in this corridor through the Commonwealth of Virginia

6. **Statement regarding SWAM participation goals:**

   Applicant agrees to pursue the stated SWAM participation goals (40%) to the maximum extent practicable

7. **Statement of Public Interest:**

   Applicant concurs that the Commonwealth of Virginia will have a public interest in the facilities, materials, equipment and improvements funded or impacted by this project

One signed original, twelve copies, and an electronic copy in pdf format of the completed application and required documentation have been mailed under applicant cover to:

Director
Virginia Department of Rail and Public Transportation
1313 East Main Street, Suite 300
Richmond, VA 23219

Attachment A
Project Data Information Form

Date: **February 2, 2009**
(orig. Jan. 23, 2008)

Name of Applicant and Project

North Carolina Department of Transportation
Southeast High Speed Rail Tier II EIS, Richmond to Raleigh

General Instructions: Please complete the following forms that apply to the project application.

- For Freight Service projects, complete forms A1, A2 and A5
- For Intercity/Amtrak passenger projects, complete forms A1, A3 and A5
- For Commuter/VRE passenger projects, complete forms A1, A4 and A5
- For projects that involve benefits to both freight and passenger projects, form A1 and forms A2-A4 that apply must be completed. For each completed form A2-A4, a form A5 must be completed for each category for projects resulting in multiple project benefits.

Terms:

Project Cost and Construction Period: Form A1 shall be completed with total project cost by year of expenditure with total DRPT cost identified by year of expenditure. This section must be completed for all project applications.

Demand Characteristics: This category of information relates to the additional demand for rail service (including freight and passenger) due to the project. This additional demand must be over and above baseline conditions that currently exist. The specific data to enter here defines initial demand, steady state demand, and the years until steady state demand is achieved.

Steady State Demand: This term refers to the point at which the project benefits/demand have reached a long-term, sustainable level.

Project Impact on Travel Distance: This category of information includes the distance that would be traveled by vehicle or train. All distances should be limited to miles within Virginia. The distance should relate directly to the project-impacted area.

Demand Characteristics for a 15-year Performance Period: This term refers to the project output by performance year, which will be utilized to determine the public benefits and to determine the performance requirements over the 15-year Performance Period of the Grant Agreement.

Attachment A
Form A1 – Project Cost and Construction Period

First Project Fiscal Year- 2010 (assumes grant agreement signed by June 30, 2009)

Last Project Fiscal Year- 2012

Note: For the purposes of the REF Grant, this "project" is the actual Environmental Impact Statement with its associated engineering design.

Total Project cost is $3,975,000, Total DRPT cost is $2,345,250 , below is spending schedule

Year	Total Project COST	Total DRPT COST
Year 1	$ 1,325,000	$ 781,750
Year 2	$ 1,325,000	$ 781,750
Year 3	$ 1,325,000	$ 781,750
Year 4		
Year 5		
Total	**$ 3,975,000**	**$ 2,345,250**

Attachment A
Form A3 – Passenger Service – Intercity/Amtrak

	CATEGORY	UNITS	VALUE
Demand Characteristics	Annual Amtrak Passengers (Existing)	Passengers/Year	542,600 base yr.
	Steady State Demand – Additional Amtrak Passengers	Passengers/Year	1,248,000
	First Year Number of Additional Passengers	Passengers/Year	124,800
	Number of Years Until Steady State	Number of Years	10

*Note: Information is based on the findings of the SEHSR Tier I EIS, and assumes a linear increase in ridership over 10 yrs (to 2025). It does not include any additional ridership from the Hampton Roads/Norfolk trains

	CATEGORY	UNITS	VALUE
Project Impact on Travel Distance & Time	Amtrak Passenger Trip Length (Existing)	Miles	281 miles
	Amtrak Passenger Trip Length (After Project Completion)	Miles	267 miles
	Amtrak Travel Time Per Trip (Existing)	Minutes	366.5 minutes
	Amtrak Travel Time Per Trip (After Project Completion)	Minutes	188.5 minutes

-Trip length is annual passenger miles divided by # of annual passengers
-Travel time assumes an existing average speed of 46 mph (based on current data), and an after completion average speed of 85 mph (based on improved design)

Attachment A
Form A5 – Demand Characteristics for 15-Year Performance Period

Performance Year	Performance Value*
1	Final design & construct.
2	Final design & construct.
3	Final design & construct.
4	Final design & construct.
5	Final design & construct. Base ridersip=542,600
6	124,800 addl. Pass.
7	249,600 addl. Pass.
8	374,400 addl. Pass.
9	499,200 addl. Pass.
10	624,000 addl. Pass.
14	748,800 addl. Pass.
12	873,600 addl. Pass.
13	998,400 addl. Pass.
14	1,123,200 addl. Pass.
15	1,248,000 addl. Pass.
Total	6,864,000 addl. Pass.

2016

* For Freight Service Projects – car loads or containers per year
For Inter-City / Amtrak Passenger Projects – passengers per year
For Commuter / VRE Passenger Projects – passengers per year

-assumes linear growth in ridership
-does not include Hampton Road trains
-assumes 4 round trips daily along SEHSR through VA

Note: For purposes of the REF grant, only benefits from passenger service are being assessed. It should be noted that considerable benefits are also anticipated from restored and improved freight rail service over the new system

DRPT
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The Smartest Distance Between Two Points

Attachment B
Rail Enhancement Fund
Project Application Checklist

Internal Use
_____
DRPT Tracking #

Date: **February 2, 2009**
(orig. Jan. 23, 2008)

Name of Applicant and Project:

North Carolina Department of Transportation
Southeast High Speed Rail Tier II EIS, Richmond to Raleigh

Checklist for Application

1. Project is consistent with goals of applicable adopted state, regional and/or local plans.

X Yes ___No

2. Project is an Additive Investment to Virginia.

X Yes ___No

3. Project provides for, or does not preclude, shared or dual access opportunity.

X Yes ___No

4. Applicant has provided documentation and certification of at least a minimum 30% match.

X Yes ___No

5. Applicant has provided an environmental review plan and/or public involvement plan, if applicable, and required budget for this activity as outlined in Appendix D.

X Yes ___No

6. Application is complete, including signature and specified number of hard copies and an electronic (pdf file) copy; and Applicant has reviewed the Standard Agreement as provided in Appendix C.

X Yes ___No

Attachment C

Schedule, Cost/Task List, Scope/Assumptions

February 2, 2009

Compiled by: David B. Foster, PE, CPM - NCDOT Rail Division

(Orig. submission January 2008)

Attachment C
Scope/Assumptions
REF Grant Application for SEHSR Tier II EIS

Southeast High Speed Rail
Draft Tier II Environmental Impact Statement
Richmond, VA, (Main Street Station) to Raleigh, NC (Boylan Wye)
(Referred to as Phase V)

Assumptions

Phase V of the Southeast High Speed Rail (SEHSR) project addresses the remaining tasks necessary to complete the required environmental documentation and preliminary design for the Tier II phase of the Southeast High Speed Rail (SEHSR) project from Richmond, VA, (Main Street Station) south to Raleigh, NC, (Boylan Wye), through the signing and approval of the Record of Decision (ROD).

Assumptions regarding the project are as follows:

- The project begins at the existing Main Street Station in Richmond, VA, and extends south to the southern project terminus in Raleigh, NC (Boylan Wye). The portion of the project from Richmond, VA, to Collier Yard, just south of Petersburg, VA, was added as part of the Phase IV scope of work for the Draft Environmental Impact Statement (DEIS).

- The project study area consists primarily of a buffered area that extends 100 feet on either side of the existing railroad centerline. In areas where the proposed rail deviates from the existing rail line onto new location, the study corridor flares out to encompass the area between the 100 foot buffer on one side of the proposed rail centerline and the 100 foot buffer on the opposite side of the existing railroad. This, in effect, makes the study area a variable width ranging from a few hundred feet wide up to a mile wide, depending on the proposed rail design. In addition, in areas where an existing or newly proposed roadway intersects the proposed rail alignment, the study area is flared out such that it encompasses enough area to include all of the associated proposed roadway and rail design.

- Three rail alignment alternatives, and their corresponding roadway design alternatives, are proposed. Each alternative shares a common point at the boundary of each of the previously described 26 sections within the project study area. The "Preferred Alternative" will consist of the least damaging environmentally preferable alternative from each of these individual sections, and when linked together as a whole, will result in what is typically referred to as a "Best Fit" Alternative.

Attachment C
Scope/Assumptions
REF Grant Application for SEHSR Tier II EIS

The following scope of work is for Phase V of the SEHSR Tier II Final Environmental Impact Statement (FEIS) and Record of Decision (ROD) and includes the following work items for each project team member;

Listing of major categories by firm:

Baker Engineering

- NEPA public hearings (for DEIS)
- Post NEPA public hearing meeting
- Preparation of the Recommendation Report
- Advisory Committee meetings
- Preparation of the Final Environmental Impact Statement (FEIS)
- Preparation of the Memorandum of Agreements (MOA) for all Section 4(f) resources
- Updating expired field surveys and data (e.g., threatened & endangered species surveys, wetland delineations)
- Meeting with the regulatory resource agencies to discuss permitting process and requirements
- Design Public Hearings (for "Preferred Alignment" & multi-use trail)
- Post design public hearing meeting
- Support services for updating construction cost and right of way estimates
- Preliminary permit application coordination with Regulatory Agencies
- Preparation of the Record of Decision (ROD)
- Additional GIS support for the preparation of maps, reports, and figures
- Project coordination and administration tasks

Gibson Engineers

- NEPA public hearings (for DEIS)
- Post NEPA public hearing meeting
- Advisory Committee meetings
- Develop the preliminary design for the multi-use trail concept once a preferred alternative is selected
- Develop the detour roadway designs for the preferred alternative
- Preliminary design modifications on the preferred alternative
- Meeting with the regulatory resource agencies to discuss permitting process and requirements
- Design Public Hearings (for "Preferred Alignment" & multi-use trail)
- Post design public hearing meeting
- Prepare detour design cost estimates and update previous cost estimate unit costs
- Project coordination and administration tasks

Attachment C
Scope/Assumptions
REF Grant Application for SEHSR Tier II EIS

Dovetail Cultural Resources Group

- Additional cultural resource investigations (e.g., underwater surveys, geomorphic excavations, battlefield delineation studies)
- Preparation of the Memorandum of Agreement (MOA) and Section 4(f) evaluations
- Project coordination and administration tasks

The Catena Group

- Updating expired field surveys and data (e.g., freshwater mussel surveys)
- Project coordination and administration tasks

Michael C. Holowaty & Associates, Inc.

- Review of the preliminary engineering designs;
- Participation in coordination activities;

Moffatt & Nichol

- Coordination on design
- Core Team participation
- Staff Support

Springboard Eydo

- Springboard Eydo to participate in SEHSR Phase V through providing Support Services and Public Outreach. The scope of these activities is not to exceed 80 hours over the duration of the contract period.

VDOT Staff Support

- Support Services for right of way/relocation/utility reports, design review, public involvement and agency coordination

Phase V is estimated to be completed by December 31, 2011 from the issuance of the Notice to Proceed (NTP) by July 1, 2009. Baker Engineering, Gibson Engineers, Dovetail Cultural Resource Group, The Catena Group, Michael C. Holowaty & Associates, Edyo Inc., and Moffatt & Nichol will provide engineering and consulting services during this phase of the project.

Detailed Scope of Work

Baker Engineering:

A. NEPA Public Hearing

Baker Engineering will assist NCDOT Rail and Gibson Engineers in obtaining complete parcel data to be displayed on the NEPA Hearing maps. Baker has previously obtained parcel data for the entire corridor, except for the portion of the project that passes through Colonial Heights, VA, and Petersburg, VA. This may require contracting a subconsultant in order to obtain the parcel owner data for Colonial Heights, VA. Once the complete parcel data is obtained, Baker Engineering will generate a mailing list for the hearing notification letters and will provide assistance to NCDOT Rail with the development of the hearing notification letters. A subconsultant will be used to print, fold, label, and mail the hearing notification letters.

Also included in this task is time for Baker Engineering staff to collect, update, and incorporate GIS data relevant to the project study corridor (e.g., road names, updated aerial photography, cultural resources). Baker Engineering will work with Gibson Engineers and NCDOT Rail staff to convert the necessary GIS data to Microstation format for inclusion on the hearing maps.

Included in this task is time for Baker Engineering staff (assumed 3 people/meeting) to attend two (2) hearing map review meetings (one in NC and one in VA) prior to the eight (8) NEPA Public Hearings. Tasks associated with these meetings include preparing for the meetings, attending the meetings, and preparing meeting minutes, if needed.

Baker Engineering will prepare for and attend eight (8) NEPA Public Hearings, four (4) in each state. This task includes time for preparing for the meeting (including GIS mapping support), providing assistance to NCDOT Rail and/or NCDOT Human Environment Unit (HEU) on the preparation of the Hearing handout, and attending the Hearings (assumed 4 people/meeting). For the hearings held in NC, the NCDOT HEU will be responsible for preparing the official transcript of the hearing. In VA, a subconsultant will be retained by Baker Engineering to prepare the official hearing transcript. Time is included in this task for Baker Engineering to prepare, revise, and distribute hearing meeting minutes for each of the eight (8) public hearings.

B. *Post NEPA Public Hearing Meeting*

Following the NC NEPA Public Hearings, Baker Engineering will assist NCDOT HEU staff with the review and consolidation of the written comments received from the public and will update the project comment database to reflect these comments. For the VA NEPA Public Hearings, Baker Engineering will assist NCDOT Rail and VA Department of Rail and Public Transportation (VA DRPT) with the collection, review, and consolidation of the comments received from the public. Baker Engineering will assist NCDOT Rail with updating the project comment database for comments received at the VA NEPA Public Hearings.

Also included in this task is time for Baker Engineering to prepare for, attend, and develop meeting minutes for two (2) Post Hearing Meetings (assumed one in NC and one in VA, 3 people/meeting). Comments from the hearings will be addressed at this time, as appropriate, and the resulting official response will be included in the FEIS.

Baker Engineering will also assist NCDOT Rail and VA DRPT with the selection of the Preferred Alternative, expected to occur immediately following the completion of the Post Hearing meetings. Time is included for Baker Engineering (assumed 3 people) to participate in a Preferred Alternative selection meeting, including preparing any supporting mapping data and/or documentation.

C. Preparation of the Recommendation Report

Following the Post NEPA Public Hearing Meetings, Baker Engineering will prepare a "Recommendation Report" that details the Preferred Alignment Alternative, including the associated impacts, costs, and specific alignments selected by Section. Time is included in this task for Baker Engineering to prepare the DRAFT Recommendation Report, revise it based on comments from the SEHSR Core Team, and distribute the FINAL Recommendation Report.

D. Advisory Committee Meetings

Baker Engineering will participate in a total of two (2) Advisory Committee Meetings as detailed below:

<u>Richmond Meeting – Post Hearing Review (1 meeting)</u>

- The purpose of this meeting is to review the DEIS and public comments from the NEPA Public Hearings with the SEHSR Advisory Committee;
- NCDOT Rail will prepare a draft invitation letter. Baker Engineering will prepare and mail meeting letters and agenda;
- NCDOT Rail will prepare a PowerPoint presentation. Baker Engineering will assist with the preparation of the meeting handouts and displays;
- Three people from Baker Engineering will attend the meeting. The time for the meeting is based on the following assumption:
    - Meeting Attendance – 4 ½ hours per person (¾ hour to setup, 3 hours for the Advisory Committee meeting, ¾ hour to breakdown)
    - Travel Time - 365 miles roundtrip and 6 ½ hours travel time
- A representative from Baker Engineering will prepare a summary of the advisory committee meeting.

<u>Raleigh Meeting – Post Hearing Review (1 meeting)</u>

- The purpose of this meeting is to review the DEIS and public comments from the NEPA Public Hearings with the SEHSR Advisory Committee;

- NCDOT Rail will prepare a draft invitation letter. Baker Engineering will prepare and mail meeting letters and agenda;
- NCDOT Rail will prepare a PowerPoint presentation. Baker Engineering will assist with the preparation of the meeting handouts and displays;
- Three people from Baker Engineering will attend the meeting. The time for the meeting is based on the following assumption:
    - Meeting Attendance – 4 ½ hours per person (¾ hour to setup, 3 hours for the Advisory Committee meeting, ¾ hour to breakdown)
    - Travel Time - 1 hour travel time
- A representative from Baker Engineering will prepare a summary of the advisory committee meeting.

E. Final Environmental Impact Statement (FEIS)

Baker Engineering will prepare an FEIS that includes a detailed description of the Preferred Alternative; addresses comments received on the DEIS, at the NEPA Public Hearings, and at the Post Hearing meetings from both the public and review agencies; describes any changes to the designs, and provides an update to the Impact Matrix for the Preferred Alternative.

The FEIS will be prepared in accordance with the condensed Final FEIS format described in FHWA Technical Advisory T 6640.8A, "Guidance for Preparing and processing Environmental and Section 4(f) Documents", dated October 30, 1987, which includes the following:

- Condensed Final EIS

  "*This approach avoids repetition of material from the draft EIS by incorporating, by reference, the draft EIS. The final EIS is, thus, a much shorter document than under the traditional approach; however, it should afford the reader a complete overview of the project and its impacts on the human environment.*

  The crux of this approach is to briefly reference and summarize information from the draft EIS which has not changed and to focus the final EIS discussion on changes in the project, its setting, impacts, technical analysis, and mitigation that have occurred since the draft EIS was circulated. In addition, the condensed final EIS must identify the preferred alternative, explain the basis for its selection, describe coordination efforts, and include agency and public comments, responses to these comments, and any required findings or determinations (40 CFR 1502.14(e) and 23 CFR 771.125(a)).

  The format of the final EIS should parallel the draft EIS. Each major section of the final EIS should briefly summarize the important information contained in the corresponding section of the draft, reference the section of the draft that

provides more detailed information, and discuss any noteworthy changes that have occurred since the draft was circulated.

At the time that the final is circulated, an additional copy of the draft EIS need not be provided to those parties that received a copy of the draft EIS when it was circulated. Nevertheless, if, due to the passage of time or other reasons, it is likely that they will have disposed of their original copy of the draft EIS, then a copy of the draft EIS should be provided with the final. In any case, sufficient copies of the draft EIS should be on hand to satisfy requests for additional copies. Both the draft EIS and the condensed final EIS should be filed with EPA under a single final EIS cover sheet."

The project Core Team (including review by NCDOT, VA DPRT, and Gibson Engineers) will provide final quality assurance/quality control (QA/QC) on each section of the FEIS as it is completed. Baker Engineering will provide overall and final FEIS formatting and editing.

After Core Team review comments have been incorporated into all the FEIS sections, Baker Engineering will prepare a copy of the FEIS for final review and comment from NCDOT. Comments will be incorporated into the FEIS, and a final copy will be printed for approval. A total of 250 copies of the approved FEIS will be prepared, as well as 500 compact discs (CDs) containing an electronic copy of the document. Direct costs for the CDs, binding, and some of the printing costs were included under Phase III.

A map book containing aerial photography of the extended project area will be produced and added to the existing map book developed for the DEIS. This revised map book will accompany the FEIS. A total of 250 copies of the entire map book, from Richmond, VA, to Raleigh, NC, will be printed, and a CD containing the aerial photography images will also be prepared. A total of 500 CDs of the aerial photography will be reproduced. Once the FEIS has been signed by FHWA, Baker Engineering will circulate the document to the various regulatory agencies, local municipalities, and local interested parties.

Included in this task is time for Baker Engineering staff to write, review, assemble, and distribute the Draft FEIS and Final FEIS. In addition, time is included for Baker Engineering to prepare the required supporting graphics, maps, and figures for the FEIS, and coordinate with NCDOT Rail and Gibson Engineers on potential design changes. General project coordination with NCDOT Rail during the preparation of the FEIS is also included.

F. Preparation of Section 4(f) Evaluations and Associated Memorandum of Agreements (MOA)

In the previous Phase IV scope of work for the portion of the SEHSR project between Richmond, VA, and Raleigh, NC, time was included for Baker Engineering to prepare up to four (4) Section 4(f) Evaluations for impacts to historic properties, parks, or wildlife refuges. Based on recent cultural resource field surveys on the Richmond, VA, to Petersburg, VA, portion of the project, it is now anticipated that additional Section 4(f) Evaluations will be required prior to completion of the DEIS. Therefore, this task includes time for Baker

Engineering to prepare up to six (6) additional Section 4(f) Evaluations for inclusion in the DEIS. As part of this scope, Baker Engineering will prepare the draft Section 4(f) Evaluations, including the associated graphics; coordinate with NCDOT Rail, VA DRPT, Gibson Engineers, Dovetail Cultural Resource Group, Mattson, Alexander & Associates, Virginia Department of Historic Resources (VDHR), and NC State Historic Preservation Office (NCSHPO) on the effects determination for any identified resources; and revise the draft Section 4(f) Evaluations based on FHWA review and comment.

In addition, this task includes time for Baker Engineering to provide assistance to NCDOT Rail and VA DRPT for the preparation of the associated Section 4(f) Memorandum of Agreements (MOA) for resources identified in the DEIS.

G. Updating Expired Field Surveys and Data (e.g., threatened & endangered species surveys, wetland delineations)

Baker Engineering staff will review the current U.S. Fish and Wildlife Service's Threatened & Endangered Species (T&E) list for the project area. If there have been additions to the list since the previous T&E surveys were completed, Baker staff will conduct the necessary field surveys for the new additions, as needed. The project study area maps will also be updated to reflect any changes in the study corridor, based on rail and roadway design limits, and Baker will survey areas within the new study corridor for the appropriate T&E species. If necessary, an Addendum to the Natural Resources Technical Report (NRTR) will be prepared, summarizing the findings of additional T&E field surveys and associated effects determinations on listed species. GIS support for the preparation of these field maps, graphics for the Addendum to the NRTR, and project related meetings related to the T&E surveys are included in this scope of work.

Baker Engineering will review the previous wetland and stream delineation data that was collected as part of the Phase II, Phase IIIa, and Phase IV contracts to determine if the information is still relevant to the project. Once the Preferred Alternative is selected, Baker Engineering will delineate jurisdictional waters of the U.S., including wetlands, on the subject site using the U.S. Army Corps of Engineers (USACE) Routine On-Site Determination method. This method is defined in the 1987 Corps of Engineers Wetlands Delineation Manual. Numbered, plastic surveyor's tape and/or pin flags will be placed at appropriate spacing at the identified wetland boundaries and "Routine Wetland Determination Data Forms" will be completed for representative locations for the selected alignment alternative. Pursuant to USACE and U.S. Environmental Protection Agency (EPA) guidance following recent Supreme Court decisions, an "Approved JD Form" will be completed for relevant reaches at the subject site. Jurisdictional waters will be delineated based on field identification of Ordinary High Water Mark (OHWM) on traditional navigable waters (TNW), wetlands adjacent to TNW, non-navigable tributaries of TNW that are relatively permanent waters (RPW), and wetlands that directly abut RPW. Non-navigable tributaries that are non-RPW, wetlands adjacent to non-RPW, and wetlands that are adjacent to but do not directly abut RPW will include a determination of significant nexus with a TNW.

Baker Engineering will field-locate the horizontal position of jurisdictional boundary location flagging using Global Positioning System (GPS) technology capable of sub-meter accuracy. Baker Engineering will document and provide this mapping in a Geographic Information System (GIS) including location, size, and extent of jurisdictional waters of the U.S. including wetlands and streams. No boundary, topographic, or professional surveying services are included in this task.

Baker Engineering will complete a "Request for Jurisdictional Verification" package using the information and field data compiled. Baker Engineering will submit the package to request site visit(s) by representative(s) of the USACE to verify the jurisdictional boundaries. Baker Engineering will coordinate and conduct field verification site visits with USACE in order to obtain concurrence on the delineations and ultimately, a Jurisdictional Determination. As with the updated T&E surveys described above, the Addendum to the NRTR will include discussion and data related to the updated wetland and stream delineations. This information will be incorporated into the FEIS. Time is included in this task for Baker Engineering to conduct background research on the previous wetland/stream delineations, complete the necessary field surveys, prepare the Addendum to the NRTR and incorporate the information into the FEIS, prepare field maps, graphics, and figures, and coordinate with NCDOT Rail, USACE staff, VA DRPT, and Gibson Engineers.

H. Preliminary Permitting Coordination

After completing the wetland and stream delineations described above, Baker Engineering will begin preparing a conceptual mitigation plan for inclusion in the FEIS. The plan will be based on the final preliminary design, including any changes from the NEPA Public Hearings. As part of this task, Baker Engineering will be available to assist NCDOT Rail and VA DRPT staff with meetings between the regulatory resource agencies and the project team to discuss the permitting process and its requirements for this project. The conceptual mitigation plan will discuss on-site mitigation potential and possibly identify sites along the project corridor that could serve this purpose. Time is also included in this task for Baker Engineering to coordinate with NCDOT Rail, VA DRPT, Gibson Engineers, and the regulatory resource agencies, as needed.

I. Design Public Hearing

Baker Engineering will update the project mailing list used at the NEPA Public Hearings to include any new names and addresses and will provide assistance to NCDOT Rail and VA DRPT with the development of the Design Public Hearing notification letters. A subconsultant will be used to print, fold, label, and mail the hearing notification letters.

Also included in this task is time for Baker Engineering staff to collect, update, and incorporate GIS data relevant to the project study corridor. Baker Engineering will work with Gibson Engineers and NCDOT Rail staff to convert the necessary GIS data to Microstation format for inclusion on the hearing maps.

Baker Engineering staff (assumed 4 people/meeting) will attend two (2) hearing map review meetings (one in NC and one in VA) prior to the eight (8) NEPA Public Hearings. Tasks associated with these meetings include preparing for the meetings, attending the meetings, and preparing meeting minutes, if needed.

Baker Engineering will prepare for and attend eight (8) Design Public Hearings, four (4) in each State. This task includes time for preparing for the meeting (including GIS mapping support), providing assistance to NCDOT Rail and/or NCDOT Human Environment Unit (HEU) on the preparation of the Hearing handout, and attending the Hearings (assumed 3 people/meeting). For the hearings held in NC, the NCDOT HEU will be responsible for preparing the official transcript of the hearing. In VA, a sub-consultant will be retained by Baker Engineering to prepare the official hearing transcript. Time is included in this task for Baker Engineering to prepare, revise, and distribute hearing meeting minutes for each of the eight (8) public hearings.

J. Post Design Public Hearing Meeting

Following the NC Design Public Hearings, Baker Engineering will assist NCDOT HEU staff with the review and consolidation of the written comments received from the public and will update the project comment database to reflect these comments. For the VA Design Public Hearings, Baker Engineering will assist NCDOT Rail and VA DRPT with the collection, review, and consolidation of the comments received from the public. Baker Engineering will assist NCDOT Rail with updating the project comment database for comments received at the VA Design Public Hearings.

Also included in this task, is time for Baker Engineering to prepare for, attend, and develop meeting minutes for two (2) Post Hearing Meetings (assumed one in NC and one in VA, 3 people/meeting). Comments from the hearings will be addressed at this time, as appropriate, and the resulting official response will be included in the Record of Decision (ROD).

K. Preparation of the Record of Decision (ROD) for SEHSR

Pending FHWA approval of the FEIS, Baker Engineering will prepare a Record of Decision (ROD) for the proposed project. The alternatives considered will be briefly discussed, followed by a detailed description of the Preferred Alternative. Baker Engineering will also include a discussion of the measures to minimize harm that were implemented during the planning and design process. Any comments received on the FEIS will be addressed in the ROD. Once the draft ROD is complete, Baker Engineering will conduct an internal QA/QC process, followed by a NCDOT Rail/VA DRPT/Core Team review. Baker Engineering will make any required revisions to the draft ROD and will submit the draft ROD to FHWA and FRA for review. Revisions to the draft will be made by Baker Engineering, if needed, and a final ROD will prepared and submitted to FHWA and FRA for final review and approval. Once the final ROD is signed by FHWA and FRA, Baker Engineering will assist NCDOT Rail with the circulation of the ROD.

L. *Additional GIS Support for the Preparation of General Maps and Figures*

Time is included in this task for Baker Engineering staff to provide miscellaneous project related GIS mapping support services to NCDOT Rail, VA DRPT, and the various subconsultants on this project. Support services range from standard GIS mapping production to assisting subconsultants with the preparation of graphics, project mapping, and figures for their use in developing project deliverables.

M. *Meetings*

Weekly Project Meetings

Baker Engineering will participate up to thirty (30) weekly project meetings (2 people/meeting) under Phase V.

Core Team Meetings

Phase V includes time for Baker Engineering (2 people per meeting) to attend up to twenty-three (23) SEHSR Core Team meetings, including scheduling the meeting, developing agendas, providing conference call facilities, attending the meetings, and preparing and distributing the meeting minutes. For purposes of estimating, it is assumed that the Core Team will meet as appropriate over the course of the time till December 31, 2011.

Small Group Meetings

Baker Engineering will participate in up to six (6) small group meetings (2 people/meeting) under Phase V. Activities under this task include assisting NCDOT Rail with the scheduling of the meeting, developing agendas, providing conference call facilities, attending meetings, and preparing and distributing the meeting minutes.

N. *Project Administration and Coordination*

Project Administration and Coordination

This task includes time for project coordination, contract administration, and review of deliverables between Baker Engineering and its subconsultants. This also includes time for miscellaneous coordination with NCDOT.

Phone and Mail Contact

During Phase V, Baker Engineering will continue to maintain the project mailing list database, including updating it after each of the Public Hearings.

In addition, Baker Engineering will maintain the project hotline, monitor and answer hotline calls, and provide a monthly summary to NCDOT of the number of hotline calls received. This summary will be cumulative by month.

Progress Reports (16)

Baker Engineering will provide monthly progress reports during this estimated sixteen through the project duration. These project reports will include updates from subconsultants' monthly progress reports and invoices.

Gibson Engineers:

A. NEPA Public Hearing

- Prepare NEPA hearing map, including complete parcel data, aerial photography, study corridor, wetlands, historic architectural resources, railroad and roadway centerlines, rights of way, and slope stakes. The NEPA map will be developed on the aerial photography used during the preliminary design. The map will be developed on roll plots at a scale of 1"= 400'. The maps will be shaded within the limits of the proposed right of way to show the different corridors. No additional coloring/ shading will be provided. The sheets for this task will be set up such that the sheets are approximately 10 feet long. The sheets will be set up such that are the broken at the county lines where practical. Only the railroad typical will be shown on the mapping.

- Attend hearing map review meeting
  A hearing map review for each state will be scheduled for the purpose of allowing all team members to review the map to ensure it accurately and clearly shows the project to the public. It is assumed 7 hours (1 hour average travel time, 2 hours prep time, and 4 hours actual meeting) for 2 people will be required for the North Carolina review. It is assumed 12 hours (6 hour average travel time, 2 hours prep time, and 4 hours actual meeting) for 2 people will be required for the Virginia review.

- Revise hearing map as needed based on comments from hearing map review meeting

- Distribute hearing map for public viewing prior to hearing
  It is assumed 17 copies of these maps will be required for North Carolina and 17 copies for Virginia.

- Attend public hearings (8)
  Four public hearings will be scheduled for North Carolina, one for each county. Four hearings will be scheduled for Virginia. It is assumed 10 hours (2 hours setup, 3 hours open house, 3 hours actual hearing, 2 hours travel) for 4 people will be required for North Carolina. It is assumed 14 hours (2 hours setup, 3 hours open house, 3 hours actual hearing, 6 hours travel) for 4 people will be required.

- Coordination with NCDOT Rail, Baker Engineering, and Division 5 staff

- Direct expenses for hearing map plotting, copies, mailings, travel, etc.
  It is assumed 17 copies of these maps will be required for North Carolina and 17 copies for Virginia.

B. *Post NEPA Public Hearing Meeting*

- Compile design related comments from NEPA hearing and sort by appropriate category.
  After the comment period has expired, the comments will be sorted and documented into common categories for distribution at the post hearing meeting.

- Address comments on design prior to post hearing meeting
  Each comment/category will be addressed and researched prior to the post hearing meeting.

- Attend post hearing meeting
  One post hearing meeting will be held in each state for the purpose of reviewing the comments received at the hearing. It is assumed 5 hours (1 hour average travel time and 4 hours actual meeting) for 2 people will be required for the North Carolina review. It is assumed 10 hours (6 hour average travel time, and 4 hours actual meeting) for 2 people will be required for the Virginia review.

- Follow-up on comments from hearing as appropriate based on discussion from post hearing meeting

C. *Advisory Committee meetings*

- Raleigh Advisory Committee meeting – Post Hearing Review (1)
  - Assist in preparation of meeting handouts/figures/maps (e.g. hearing map)
  - Attend meeting
    It is assumed 7.0 hours (1 hour average travel time, 2 hours prep time, and 4 hours actual meeting) will be required for this task for 2 people.
  - Direct expenses associated with printing and travel
  - Coordination with Baker and NCDOT Rail

- Richmond Advisory Committee meeting – Post Hearing Review (1)
  - Assist in preparation of meeting handouts/figures/maps (e.g. hearing map)
  - Attend meeting
    It is assumed 12 hours (6 hours average travel time, 2 hours prep time, and 4 hours actual meeting) will be required for this task for 2 people.
  - Direct expenses associated with printing and travel
  - Coordination with Baker and NCDOT Rail

D. *Develop the detour roadway designs for the preferred alternative*

Time is included for Gibson Engineers representatives to develop the following:

- Develop Horizontal based on design speed.
- Develop Vertical based on design speed, and maintenance of traffic

- Prepare Proposed Cross Sections for Refined alignments on existing cross sections
- Prepare Proposed Construction Limits
- Prepare Right of Way Limits
  It is assumed up to 35 detour alignments will be required for the preferred alternative in North Carolina and 35 in Virginia.

E. Preliminary design modifications on the preferred alternative

Assumed up to 15 Revisions will be required based on the NEPA Public Hearing for North Carolina and 15 for Virginia.

F. Update Design Cost Estimates

- Update Design Estimates
  Construction cost estimates will need to be revised for updated unit costs and to include detour designs and any revisions resulting from the hearings.

- Prepare Greenway Cost Estimates
  Functional construction cost estimates will need to be prepared for the greenway.

G. Preliminary Permitting Process

- Meet with the regulatory resource agencies to discuss permitting process and requirements
- Possible design revisions based on resource agencies comments (e.g., tighten up fill slopes to minimize wetland/stream impacts)
- Coordination with NCDOT and Baker

H. Design Public Hearings

- Prepare Design Public Hearing map
  A design public hearing map will be prepared to meet standard hearing map requirements and developed on aerial mapping. The different areas of interest will be colored using the standard coloring scheme where possible. The map will be at a scale of 1"=200'. These maps will be set up such that the sheets are approximately 10' long and will be broken at the county lines where practical. Only the railroad typicals will be shown on these maps.

- Attend hearing map review meeting
  A hearing map review for each state will be scheduled for the purpose of allowing all team members to review the map to ensure it accurately and clearly shows the project to the public. It is assumed 7 hours (1 hour average travel time, 2 hours prep time, and 4 hours actual meeting) for 2 people will be required for the North Carolina review. It is assumed 12 hours (6 hours average travel time, 2 hours prep time, and 4 hours actual meeting) for 2 people will be required for the Virginia review.

- Attend public hearings (8)
  Four public hearings will be scheduled for North Carolina, one for each county. Four hearings will be scheduled for Virginia. It is assumed 10 hours (2 hours setup, 3 hours open house, 3 hours actual hearing, 2 hours travel) for 4 people will be required for North Carolina. It is assumed 14 hours (2 hours setup, 3 hours open house, 3 hours actual hearing, 6 hours travel) for 4 people will be required.

- Coordination with NCDOT Rail and Baker

- Direct expenses for plotting, copies, travel, etc.
  It is assumed 17 copies of these maps will be required for North Carolina and 17 copies for Virginia.

I. Post design public hearing meeting

- Compile design related comments from design hearing and sort by appropriate category

- Address comments on design prior to post hearing meeting

- Attend post hearing meetings
  One post hearing meeting will be held in each state for the purpose of reviewing the comments received at the hearing. It is assumed 5 hours (1 hour average travel time and 4 hours actual meeting) for 2 people will be required for the North Carolina review. It is assumed 10 hours (6 hour average travel time, and 4 hours actual meeting) for 2 people will be required for the Virginia review.

- Follow-up on comments from hearing as appropriate based on discussion from post hearing meeting

J. Project coordination and administration tasks

- Monthly invoicing and progress reports
  Gibson Engineers will detail their project activities in a progress report and will submit the report with their appropriate invoices to Baker Engineering. Sixteen (16) progress reports are scoped through Dec. 31, 2011.

- Project Team meetings
  Currently, the project team is meeting once a week to discuss the ongoing design tasks for the project. Additional time for Gibson Engineers to continue attending these weekly coordination meetings is included in this scope of work. It is assumed that an additional 4 hours per meeting (1 hour average travel time, 0.5 hour prep time, and 2.5 hours actual meeting) for 1 person will be required. Time is included in this scope of work for approximately 69 team meetings for a total time of 276 hours.

- Small group meetings with municipalities, resource agencies, public, etc.

Up to twelve (12) additional small group meetings are anticipated during this phase of the project. Six (6) are anticipated for North Carolina and six (6) for Virginia. Gibson Engineers will provide two people for participation in these meetings. The time for each small group meeting is based on the following assumptions:

- Meeting preparation – 2 hours
- NC meeting attendance – 6 hours (2 hours average travel time)
- Virginia meeting attendance – 10 (6 hours average travel time)
- Meeting summary – 1 hour

- SEHSR Core Team meetings
  Gibson Engineers will participate in Core Team coordination meetings (assume 23 meetings) as appropriate. Two employees from Gibson Engineers will participate in the meetings (2.5 hours are assumed per person for each meeting with 1 hour of travel time each).

- General coordination with NCDOT Rail, Baker, and internal staff

  Time is included in this scope of work for miscellaneous coordination between Gibson Engineers and NCDOT, Baker Engineering, etc. It is assumed that up to forty (40) hours per month of general coordination will be required. Total time included is 640 hours.

Dovetail Cultural Resource Group:

A. Additional cultural resource investigations (e.g., underwater surveys, geomorphic excavations)

- **Battlefield Delineation Studies**

This task involves assessing the defined National Register of Historic Places (NRHP) boundaries of battlefield resources within the area of potential effect (APE) to determine if the current boundaries are appropriate and still retain the necessary integrity to be included within the NRHP boundaries.

- Assumptions
  - Due to the high degree of development in Virginia along major transportation corridors and the nature of the development of boundaries for battlefield resources, it is assumed that all four battlefields in the Petersburg to Richmond section may require delineation studies.

Dovetail Cultural Resource Group (Dovetail) will coordinate closely with representatives from Baker, the North Carolina Department of Transportation (NCDOT), the Virginia Department of Historic Resource (DHR) and, if requested, county-level and locally-based officials. Information provided by these groups will be invaluable in terms of defining the scope and focus of Dovetail's preliminary research and subsequent survey efforts, and imperative to the successful completion of all relevant documents. Coordination will likely comprise two formal meetings, several informal meetings to be scheduled at appropriate intervals, and telephone discussions to follow up on the progress of the project and to clarify any project-related questions and issues regarding associated forms and materials.

After the initial coordination meeting and prior to any fieldwork, Dovetail will conduct a thorough background literature and records review of the battlefields, the historic built landscape and its constituent historic resources. This work will include an investigation of records detailing previous cultural resource investigations and the acquisition of documents on recorded archaeological sites and architectural properties held by the DHR and the National Park Service (NPS), including the state Data Sharing System (DSS) forms—the formal inventory forms maintained by the DHR on all recorded historic properties. Dovetail project staff will also survey relevant historical sources housed with, but not limited to, the NPS, Library of Congress, Library of Virginia, Virginia Historical Society, and the local County Public Library systems among others.

The research phase is not expected to involve substantial travel time. Electronic access to documentary resources available online through the Library of Congress, the Library of Virginia, and others, and phone consultations with staff from those repositories without remote access will significantly reduce the need for travel. The

information collected during the research phase is necessary for developing historic contexts for the battlefield areas as a whole and the individual historic properties contained therein. The historical data and the contexts that emerge can then be utilized to evaluate the contributions and relative historical significance of cultural elements recorded during the field inspection.

The fieldwork phase will comprise a reconnaissance evaluation of all previously-identified and unidentified historic properties within the project area that meet the 50 years of age criterion *Note:* The work proposed here does not include any subsurface investigations to identify or explore archaeological sites.

In the field, Dovetail staff will inspect the entire project area through a combination of pedestrian and vehicular surveys to locate and identify all elements within the delineated battlefield. Each element, including historic properties and cultural landscapes, will be documented through survey forms, written notes, black & white photographs, and digital imaging. Each element will also be mapped on U.S.G.S. 7.5-minute topographic maps and any other mapping resources available using a hand-held global positioning system (GPS) receiver. The survey, in conjunction with materials obtained during the background review, will help determine whether each element is contributing or noncontributing to the larger proposed battlefield. The resulting documentation can also be used by the Southeast High Speed Rail Team for future planning and to accurately locate all cultural remains within the study area.

The scope of the boundary delineation, mapping and identification of individual resources will be determined in consultation with Baker, DHR and the NCDOT and conform to National Register Bulletin 40, *Guidelines for Identifying, Evaluating and Registering America's Historic Battlefields*, National Register Bulletin 30, *Guidelines for Evaluating and Documenting Rural Historic Landscapes*, and the National Register Bulletin entitled *Defining Boundaries for National Register Properties*. At a minimum, the mapping will include information on the contributing/noncontributing status of each non-landscape element and its location. The map can be used for current and future planning purposes and to identify key elements within the district's boundaries.

Once the field survey has been completed, Dovetail will prepare a report on the investigations that meets the DHR's standards for cultural resource reports. The report will include the results of the background review, cultural and environmental setting, the methodology used in the investigations, the general nature and extent of cultural properties encountered during the survey, a brief analysis of the battlefield and the contributing elements recorded during the fieldwork, and a discussion of the viewshed analysis. A brief discussion of the significance and integrity of the battlefield will also be included. The report will also present recommended boundaries for the battlefields with justification for the boundaries based in the National Register Bulletin 40, *Guidelines for Identifying, Evaluating, and Registering America's Historic Battlefields*.

Draft copies of the report and attendant DSS forms will be submitted to Baker and the NCDOT for review and comment. Once this has been accomplished, all edits and

comments will be addressed and a revised draft will be submitted. After receiving comments on the revised draft, a final draft will be sent to the DHR for their review. Final DSS forms and associated maps and photographs will be sent to the DHR for their files with the final documents once all comments from all agencies have been addressed. Ten hard copies and two electronic copies of the final report will be submitted to the client.

Additionally, Dovetail will coordinate general project results and potential National Register of Historic Places (NRHP) eligibility for all identified archaeological sites and architectural sites with the Virginia Department of Historic Resources (DHR). This coordination will involve providing a letter describing resources and providing eligibility recommendations based on the NRHP guidance.

- **Underwater Archaeological Surveys for Appomattox and James Rivers, if required**

This task involves a survey and evaluation of submerged cultural resources within the project area at the James and Appomattox crossings.

  - Assumptions
    - Due to a lack of equipment and qualified personnel at Dovetail Cultural Resource Group to conduct nautical surveys, this task will be completed by a subcontractor.
    - Both of the Appomattox crossings will need to be surveyed to determine the preferred alternative.

Dovetail will procure a qualified contractor to conduct a survey of the major river crossings at the James and Appomattox Rivers. At the James River, this survey will likely involve GPS positioning, a magnetic survey linked to the GPS, acoustic data collection using a side-scan sonar system, bathymetric data collection using a echosounder linked to the GPS, and sub-bottom profiling using a digital profiler.

Anomalies identified during the survey will be analyzed on the basis of several criteria. Magnetic anomalies will be assessed on the basis of their amplitude, duration, signature, and spatial extent. Anomalies recorded by the side scanner and echosounder will be analyzed on the basis of their shape, relief, and spatial extend, and anomalies recorded by the sub-bottom profiler will be analyzed based on their shape and spatial extent. All data will be correlated using GPS positions and plotted via ArcGIS. Magnetic and bathymetric data will be construed via ArchGIS and/or Surfer to provide visual aids for interpretation. Remote sensing data then will be correlated with a variety of shipwreck and historical site databases, geomorphic and historical research results as presented in the Phase I terrestrial cultural resource report, and general observations noted during data collection.

Once the field survey has been completed, a report will be prepared on the investigations that meets the DHR's standards for cultural resource reports. Because

the Phase I terrestrial archaeology report includes the background review, cultural and environmental setting this report will not repeat those sections. However, it will include the methodology used in the investigations, the general nature and extent of cultural properties encountered during the survey and NRHP recommendations for any encountered resources.

Draft copies of the report and attendant DSS forms will be submitted to Baker and the NCDOT for review and comment. Once this has been accomplished, all edits and comments will be addressed and a revised draft will be submitted. After receiving comments on the revised draft, a final draft will be sent to the DHR for their review. Final DSS forms and associated maps and photographs will be sent to the DHR for their files with the final documents once all comments from all agencies have been addressed. Ten hard copies and two electronic copies of the final report will be submitted to the client.

Due to the shallow water depths at both the Appomattox crossings some alternative survey methods may be employed. However, the general nature of the survey will be the same as at the James River Crossing.

- **Geomorphic Archaeological Excavation for Major River Crossings (Appomattox, James, etc.), if required**

This task involves excavation of trenches along the major river crossings at the James River and Appomattox and consultation with a Geomorphologist to determine the potential for and presence of deeply-buried archaeological resources.

  - Assumptions
    - Due to a lack of qualified personnel at Dovetail to conduct geomorphical studies, this task will be completed by a subcontractor.
    - Both of the Appomattox crossings will need to be surveyed to determine the preferred alternative.
    - A total of 14 backhoe trenches will be needed – two on each bank of the crossings and two on Mayo's Island at the James Crossing.

Dovetail will procure a qualified contractor to conduct a geomorphological survey of the major river crossings at the James and Appomattox Rivers. This geomorphological study will be aimed at assessing archaeological potential and aiding in the development of an appropriate archaeological testing strategy (including an assessment of the depth required and any areas of concern for safe/practical field testing) for the sediments within each of three proposed river crossings: James River Crossing, Appomattox River Crossing Alternative 1, and Appomattox River Crossing Alternative 2. The APE footprint at each of the crossings is approximately 100-feet wide on both banks of each river, extending slightly inland, about 100 feet. At the James River Crossing there is an additional APE location on Mayo's Island that will also require examination.

Two backhoe trenches will be excavated on each bank of each crossing. In addition two trenches will be excavated on Mayo's Island at the James River Crossing. A geomorphologist will examine the stratigraphy and sediments in each trench to determine formation of the landform and age of the strata. In addition, the geomorphologist will examine the surrounding landscape to assist in understanding formation of the general area.

Once the field survey has been completed, a report will be prepared on the investigations that meets the DHR's standards for cultural resource reports. Because the Phase I terrestrial archaeology report includes the background review, cultural and environmental setting this report will not repeat those sections. However, it will include the methodology used in the investigations, the general nature of the geology of the area and recommendations for the potential of encountering deeply-buried archaeological resources in these areas.

Draft copies of the report will be submitted to Baker and the NCDOT for review and comment. Once this has been accomplished, all edits and comments will be addressed and a revised draft will be submitted. After receiving comments on the revised draft, a final draft will be sent to the DHR for their review. Ten hard copies and two electronic copies of the final report will be submitted to the client.

- **Phase II Investigations at All Sites Determined Potentially Eligible for Listing on the NRHP**

This task involves the evaluation of all sites that were identified during the Phase I survey and determined potentially eligible for listing on the NRHP. Phase II level evaluations will be conducted to conclusively determine the eligibility of these sites.

  - Assumptions
    - That the general site density for the Petersburg to Richmond Section will be consistent with the Petersburg to North Carolina section (0.4 sites/mile)
    - That the percentage of sites (37%) recommended as potentially eligible for the Petersburg to Richmond Section will be consistent with the Petersburg to North Carolina section.
    - Based on the previous two assumptions – a total of 10 sites will be identified during the Phase I survey of the Richmond to Petersburg section and that 4 of these will require Phase II level evaluations.

As part of the Phase II evaluations, Dovetail will conduct extensive archival research on each property. The goal of the research is to collate detailed information on the history of the property to create an occupational narrative and to understand its place in the County's settlement and within the site's specific DHR defined theme. Resulting documentation will include a thorough deed and will search and a history of occupation in their respective county.

Attachment C
Scope/Assumptions
REF Grant Application for SEHSR Tier II EIS

To complete the research goals, Dovetail will examine records at numerous repositories in the localities and on the world wide web. Agencies and repositories to be visited during the work could include the county Circuit Courts, the county historical societies, and the Virginiana Room at the Central Rappahannock Regional Library in Fredericksburg. Because a plethora of archival documents are now available on-line, it is anticipated that extensive travel will not be required to complete the research. Online resources will include the Library of Congress in Washington D.C., the Library of Virginia in Richmond, the DHR, and several other historical research web pages.

While no specific methodology can be developed for the Phase II evaluations of these sites at this time, the field component of this project will likely consist of four parts: establishment of a grid across the site, the excavation of shovel tests, intensive metal detecting, and excavation of three to eight, 3 x 3 feet test units. During the first phase, two Dovetail archaeologists will establish a systematic grid across the site using a total station and aided by measuring tapes and scaled drawings of the project area. Permanent datum and field datum points will be established.

Once the grid is established, Dovetail archaeologists will excavate shovel test pits (STPs) augmented by an intensive metal detector survey. Shovel test interval for this phase of the work will likely be 25 feet and the interval for the metal detector survey will likely be 10 feet if needed. At the conclusion of the shovel testing and metal detecting, 3 x 3 feet units will be excavated in areas of high artifact concentrations or displaying the potential for containing intact features. The exact number of units will depend on the site type and size. Unit placement will be determined by artifact quantities recovered in the STPs and metal detector survey. The units will be placed to examine areas of perceived cultural activity. The units will allow for the close examination of stratigraphy of the site. This will permit archaeologists to begin to understand site formation issues as well as provide better depositional context for the recovered artifacts.

After the fieldwork, all recovered artifacts will be transported to the Dovetail lab for processing. Lab work will include washing all artifacts, cataloguing the materials, and labeling the artifacts according to site number and provenience. The information attained from the analysis will be used to determine site boundaries, temporal association, and, if possible, site function. In addition, all recovered artifacts and documentation must be curated at an approved repository. Curation involves preparing the artifacts (washing, labeling, cataloguing, etc.) and paying a fee for storage space. If artifacts are recovered during the testing, Dovetail will give the artifacts to the property owner. Should the client prefer to curate the artifacts at the DHR, Dovetail will bill the client for the appropriate curation cost.

Once the field survey and artifact analysis have been completed, Dovetail will prepare a report on the investigations that meets the DHR's standards for archaeological reports. The report will include the results of the background review, cultural and environmental setting including the historical/archival research, the methodology used in the investigations, the general nature and extent of materials

encountered during the archaeological work, and an analysis of all features exposed during the fieldwork in relation to the historic context.

A DHR DSS forms will be completed for each site. This includes preparation of an information form and the creation of a location map and plan map for the site. The DSS form and accompanying material will be bundled with a plasticlip, as requested by the DHR. The DSS form will provide the DHR the needed information to record the site within the permanent state site documentation archives.

Draft copies of the report and attendant DSS forms will be submitted to the Baker and the NCDOT for review and comment. Once this has been accomplished, all edits and comments will be addressed and a revised draft will be submitted. After receiving comments on the revised draft, a final draft will be sent to the DHR for their review. Final DSS forms and associated maps and photographs will be sent to the DHR for their files with the final documents once all comments from all agencies have been addressed. Ten hard copies and two electronic copies of the final report will be submitted to the client.

Additionally, Dovetail will coordinate general project results and potential National Register of Historic Places (NRHP) eligibility for all identified archaeological sites and architectural sites with the Virginia Department of Historic Resources (DHR). This coordination will involve providing a letter describing resources and providing eligibility recommendations based on the NRHP guidance.

B. Memorandum of Agreement (MOA) and Section 4(f) evaluations

- **Attend "effects" meetings with DHR**
- **Consult with FRA/FHWA, NPS, NCDOT Rail, VA DRPT, VDOT, DHR, and Baker on potential impacts and adverse effects to historic resources**
- **Assist Baker in preparation of a Section 106 MOA to resolve adverse effects on historic properties**
- **Assist Baker with the preparation of the required Section 4(f) evaluations**

The above listed tasks all overlap and will be addressed below as one large task. This task will focus on coordination, negotiation and resolution of effects on historic properties.

- Assumptions
  - The project will have an adverse effect on historic properties.
  - All ten battlefields within the project's APE will be considered impacted 4(f) resources.
  - Three historic districts will be considered impacted 4(f) resources.
  - 25% of individual properties eligible for the NRHP will be considered impacted 4(f) resources.
  - All negotiation and consultation meetings will require 4 hours of preparation time prior to the meeting.

- All negotiation and consultation meetings will require 4 hours of documentation time after the meeting.
- Ten groups will request consulting party status.

Once the DHR has determined the overall project effect, Dovetail will prepare the necessary documentation to close the Section 106 process. Assuming for planning purposes that this project will have adverse effect on historic properties, Dovetail will prepare a MOA to resolve the adverse effects of this project. Depending on the nature of previous meetings with the DHR and other consulting parties, additional meetings may be required to adequately coordinate necessary mitigation measures and satisfy the consultation requirements of Section 106. Dovetail will attempt to minimize the number of meetings and length of this process to the maximum extent possible. Dovetail will assist Baker in coordinating the production of documentation of any meetings that take place during this phase of the project. This includes producing written minutes of all meetings and distributing these to the consulting parties and agencies.

Once a draft MOA has been completed, copies will be circulated internally among Baker, NCDOT and Federal Highway Administration (FHWA) and/or the Federal Rail Authority (FRA). Once comments are received, edits will be made and the draft will be re-circulated internally. When internal consensus is reached on the document, it will be circulated among all the consulting parties and other agencies and reasonable deadlines established for a comment period. As soon as comments have been received, they will be addressed in the most appropriate manner possible. Dovetail will submit final copies of the MOA to the DHR and all appropriate participating agencies signature. Final copies of the MOA will then be sent to all consulting parties and other non-signing agencies.

Also as part of this task, Dovetail will assist Baker in preparing Section 4(f) evaluations for all impacted 4(f) resources. Dovetail will not be responsible for producing engineering documents that may be needed in developing necessary avoidance alternatives. However, Dovetail will prepare the evaluation report for submission to the FHWA/FRA. Dovetail will be proactive in application of de minimis standards to any qualifying 4(f) resources to lower the projects documentation requirements for 4(f) resources.

C. *Archaeological Data Recovery*

- Data recovery for archaeological resources is not included in this scope of work. If these services are needed, a separate contract and supplement will be required.

D. *Project coordination and administration tasks*

This task encompasses general project coordination and administrative tasks. These tasks include preparing mailings of certified letters to property owners, as needed, and MOA circulation, preparation of monthly invoices and preparation of monthly progress reports.

- Assumptions

Attachment C
Scope/Assumptions
REF Grant Application for SEHSR Tier II EIS

- 1 Kick-off meeting either by phone or in Richmond
- Progress reports will average 3 pages

The Catena Group

A. PROJECT SYNOPSIS

The Catena Group (TCG) conducted preliminary freshwater mussel surveys in a total of 38 streams for the project in 2003 through 2007. Due to one or more of the following factors; known protected species locations, known good habitat conditions for protected species, new information, and/or updated species status, it was concluded that additional survey efforts are necessary in seven of these water bodies, as listed in Table 1. The presence/absence of freshwater mussels within these water bodies will need to be updated, particularly in the project area, in order to assess potential impacts to mussels from construction of the proposed project.

Table 1. Additional Freshwater Mussel Surveys for Southeast High Speed Rail

Water Body	Basin	County
Neuse River	Neuse	Wake, NC
Tar River	Tar/Pamlico	Franklin/Vance, NC
Meherrin River	Chowan	Brunswick, VA
Nottoway River	Chowan	Dinwiddie, VA
Sappony Creek	Chowan	Dinwiddie, VA
Appomattox River	James	Dinwiddie/Chesterfield, VA
James River	James	Richmond City/Henrico, VA

B. PRESURVEY INVESTIGATION

Prior to conducting in-stream surveys, the results of previous surveys in the water bodies listed in Table 1 will be reviewed. Sources to be consulted include the North Carolina Wildlife Resource Commission (NCWRC), Virginia Natural Heritage Program (VNHP), and the Virginia Department of Game and Inland Fisheries (VDGIF).

C. FIELD DATA COLLECTION

The US Fish & Wildlife Service (USFWS) recommends a minimal survey area for aquatic species to extend from 400 meters (1,300 feet) downstream of the most downstream point of impact to 100 meters (325 feet) upstream of the most upstream point of the potential impact area. Therefore, the limits of the survey effort for each stream will be defined as starting at a point 400 meters (1,300 feet) downstream of the downstream edge of the project right-of-way, and extending upstream to 100 meters (325 feet) of the upstream edge of the project right-of-way.

A minimum of a three-person survey team will be used for all water bodies, with the exception of the James River. The large size of the James River will require a five-person survey team, three of which will be SCUBA equipped in order to cover all mussel habitat types effectively and safely. Mussel searches will begin at the downstream end of the survey distance. The survey team will spread out across the water body into survey lanes and proceed upstream using both visual and tactile surveys methods. Timed searches will be employed to provide Catch Per Unit Effort (CPUE) data for each species. A new timed search will begin if there is a noted change in

habitat conditions as the crew proceeds upstream. The beginning and ending points of the timed surveys will be determined in the field and will be based on the existing habitat conditions. There will be a minimum of two timed searches at each site (upstream and downstream of existing crossing).

Visual surveys will be conducted using glass bottom buckets (bathyscopes), mask/snorkel, or SCUBA. Tactile methods will also be employed in areas of poor visibility as well as in streambanks under submerged rootmats. The methods to be used will depend on habitat conditions. All species of freshwater bivalves will be recorded, photographed and returned to the substrate. All species that are monitored by VDGIF will be measured and checked for evidence of reproduction. Any relict shells will be collected and deposited in the NC Museum of Natural Sciences as voucher specimens. If any federally protected species are found during the survey efforts, the location will be recorded using GPS and marked along the stream bank with flagging. After measurements are taken, each listed mussel will be returned to the location in which it was found. The USFWS and the appropriate state agencies will be contacted concurrently with BEI of the findings.

Appropriate disinfection of equipment will be followed when moving between river basins, to avoid intrabasin contamination of various organisms (bacteria, viruses etc.) that may pose a threat to the aquatic fauna.

D. TRAVEL TIME/SURVEY PREPARATION TIME

It is anticipated that the proposed survey tasks will take a minimum of 11 work (field) days to complete and a total of 250 person-hours (see attached Estimate). This includes at least 4 hours each day to account for travel time, survey preparation (equipment gathering, cleaning etc.), and time to access survey sites.

E. REPORT PREPARTION

A final survey report for each stream crossing will be given to BEI after completion of the mussel surveys. This report will provide details of the survey, including the number of individuals found and CPUE for each species, physical habitat observations, GPS information of each survey point and recommendations for conservation measures if applicable. Digital photographs of representatives of each species found will also be included. The report will also include a determination of likely impacts to the species in question.

F. PROJECT MANAGEMENT/ADMINISTRATIVE TASKS

Administrative services such as phone calls, letters, and meetings, coordination with BEI, appropriate resource agencies, preparation and distribution of voucher materials, and report writing are included.

G. ESTIMATED TIME AND COSTS

The amount of time it will take to survey each crossing will vary depending on water body size, conditions (water flow, clarity etc.) and the number of mussels present. An estimate of actual survey time for each water body is shown in the attached Task List and Estimate.

Attachment C
Scope/Assumptions
REF Grant Application for SEHSR Tier II EIS

These estimates are based on the size of each water body, and knowledge of the particular streams. Due to the larger size of most the water bodies listed in this proposal, however, it is anticipated that each will take one or more days to complete.

Barring unusual weather circumstances, it is anticipated that the completed report will be delivered to Baker Engineering within five months of receiving the Notice to Proceed.

If it is determined that a Section 7 Consultation is required, then that work will be considered out of scope. Existing budget and contingency funds will be utilized to meet out of scope needs to the maximum degree possible.

Attachment C
Scope/Assumptions
REF Grant Application for SEHSR Tier II EIS

Michael C. Holowaty & Associates, Inc.

A. Review of the preliminary engineering designs;

Review and comment on engineering designs.

Review design documentation provided by Baker Engineering and provide oral and written comments, as requested. Documentation reviewed could include sketches, assumptions, and preliminary designs. Work will not be undertaken without direct authorization of Baker and the NC Department of Transportation Project Manager.

Review and comment on operational issues

Review operational documentation provided by Baker Engineering and provide oral and written comments, as requested. Documentation could include TPC runs and data bases developed by the project team. Issues could include placement of interlockings and the effect of the alternative station locations on passenger and freight train operations. Extent of individual reviews will be agreed in advance; agreement will include definition of whether written or oral comments are required. Mr. Holowaty will coordinate all activities with appropriate Baker and the NC Department of Transportation Project Manager. Work will not be undertaken without direct authorization of Baker and the NC Department of Transportation Project Manager.

B. Participation in coordination activities;

Participate in an estimated 12 Coordination meetings, each to last approximately 1.25 hours.

Participate in an estimated three team coordination meetings to discuss and advise on engineering design and operational issues.

Attachment C
Scope/Assumptions
REF Grant Application for SEHSR Tier II EIS

Moffatt & Nichol

A. Design Coordination

Moffatt & Nichol will provide engineering and consulting services during this phase of the project in support of on-going design efforts. We are estimating approximately one week of design coordination will be required for one person.

B. Core Team participation

Moffatt & Nichol will continue to participate in Core Team Meetings. We are estimating that one person will attend approximately 16 two hour meetings with an additional one hour per meeting to travel to/from the meeting site.

C. Support Services

Moffatt & Nichol will provide environmental staff support as requested by the Rail Division. We are estimating that one person will assist NCDOT staff for approximately ten hours per week.

Springboard Eydo

A. Support Services

Springboard Eydo to provide support services for NCDOT not to exceed 40 hours over the duration of the contract period.

B. Public Outreach

Springboard Eydo to provide Public Outreach services for NCDOT not to exceed 40 hours over the duration of the contract period.

Virginia Department of Transportation

A. Support Services

VDOT will provide support services for NCDOT not to exceed $95,000 over the duration of the contract period. The work will include items such as right of way/relocation/utility reports, design review, public involvement and agency coordination. The actual work will be authorized by Task Orders as directed by the NCDOT Project Manager, and will be billed to NCDOT at standard VDOT rates.

	PROJECT DESCRIPTION: SEHSR Corridor, Richmond, VA (Main Street Station) to Raleigh, NC (Boylan Wye)	Note: Numeric values are hours
	PREPARED BY: Baker Engineering (CMY)	9.9083002
		man hours
TASK NO.	TASK DESCRIPTION	TOTAL
A	**NEPA PUBLIC HEARING**	
	Update parcel data for project corridor	40
	Generate mailing list	32
	Prepare Public Hearing notification letter	9
	Update GIS data (e.g., road names, aerial photography, etc.)	36
	NEPA Hearing Map Review Meeting (2 meetings, 3 people/mtg)	
	Meeting prep (agenda, handouts, graphics, maps)	56
	Attend meeting (2 mtgs)	57
	Prepare meeting minutes	6
	NEPA Public Hearings (4 in each state, 8 total mtgs)	
	Prepare handout	64
	Prepare maps, graphics, meeting materials	56
	Attend Hearings	384
	Prepare meeting minutes	56
B	**POST NEPA PUBLIC HEARING MEETING**	
	Review and consolidate comments from Hearing	32
	Update comment database	72
	NEPA Post Hearing Meetings (2 mtgs total)	
	Meeting prep (agenda, handouts, graphics, maps)	24
	Attend meeting	45
	Prepare meeting minutes	6
	Preferred Alternative Selection Meeting	
	Meeting prep (agenda, handouts, graphics, maps)	12
	Attend meeting	24
	Prepare meeting minutes	6
C	**RECOMMENDATION REPORT**	
	Prepare draft report	164
	QA/QC and revisions	14
	Prepare final report	40
D	**ADVISORY COMMITTEE MEETINGS**	
	Richmond, VA Meeting (3 people/mtg)	
	Prepare draft invitation letter and mail	14
	Prepare agenda	3
	Prepare meeting handouts and displays	30
	Attend meeting	30
	Prepare meeting minutes	8
	Raleigh, NC Meeting (3 people/mtg)	
	Prepare draft invitation letter and mail	14
	Prepare agenda	3
	Prepare meeting handouts and displays	30
	Attend meeting	15
	Prepare meeting minutes	8
E	**FEIS**	
	Draft FEIS Preparation	
	Summarize information in DEIS that has not changed	128
	Discuss changes in project since DEIS	
	Changes in setting	0

	PROJECT DESCRIPTION: SEHSR Corridor, Richmond, VA (Main Street Station) to Raleigh, NC (Boylan Wye)	Note: Numeric values are hours
	PREPARED BY: Baker Engineering (CMY)	**9.9083002**
		man hours
TASK NO.	TASK DESCRIPTION	**TOTAL**
	Changes in impacts	40
	Technical analysis of changes	108
	Changes in mitigation plan	28
	Identify the Preferred Alternative	32
	Explain basis for selection	24
	Describe coordination efforts	64
	Include and respond to agency and public comments	200
	Detail findings or determinations	68
	Assembly of Draft FEIS	166
	Prepare Draft FEIS Mapbook	116
	QA/QC and formatting for draft	96
	Revisions to draft FEIS	36
	Final FEIS Preparation	
	Assembly of Final FEIS	68
	Prepare Final FEIS Mapbook	58
	QA/QC and formatting for Final FEIS	64
	Revisions to Final FEIS	40
	Coordination with FHWA, FRA, NCDOT Rail, VADRPT, Core Team,	40
F	**SECTION 4(f) EVALUATIONS & MOAs**	
	Prepare Section 4(f) Evaluations (up to 6 total)	144
	Prepare figures, maps, and graphics	140
	QA/QC of draft evalautions	37
	Revisions	48
	Prepare final Section 4(f) Evaluations (up to 6 total)	32
	Coordination with FHWA, FRA, NCDOT Rail, VADRPT, NCSHPO, VDHR)	176
	Assist with the prep of Section 4(f) Evaluation Memorandum Of Agreements	108
G	**UPDATE FIELD SURVEYS**	
	Threatened & Endangered Species	
	Background research and review	44
	Update/prepare project field maps	84
	Field surveys for the Preferred Alternative ONLY	400
	Update NRTR	112
	Coordination w/USFWS, NCDOT, etc.	64
	Wetland/Stream Delineations	
	Background research and review	76
	Update/prepare project field maps	152
	Field surveys for the Preferred Alternative ONLY	2320
	Field GPS Survey	840
	Prepare Data Forms and JD forms	520
	GPS Post-Processing	200
	Prepare USACE Verification Package	144
	Field Verification with USACE	184
	Update NRTR	120
	Coordination w/USACE, NCDOT, etc.	132
H	**PRELIMINARY PERMIT COORDINATION**	
	Prepare conceptual mitigation plan	160

	PROJECT DESCRIPTION: SEHSR Corridor, Richmond, VA (Main Street Station) to Raleigh, NC (Boylan Wye)	Note: Numeric values are hours
	PREPARED BY: Baker Engineering (CMY)	9.9083002
		man hours
TASK NO.	TASK DESCRIPTION	TOTAL
	Assist with regulatory resource agency meetings	64
	Coordination	56
I	**DESIGN PUBLIC HEARING**	
	Update parcel data for project corridor	40
	Generate mailing list	28
	Prepare Public Hearing notification letter	8
	Update GIS data (e.g., road names, aerial photography, etc.)	38
	Design Hearing Map Review Meeting (2 meetings, 3 people/mtg)	
	Meeting prep (agenda, handouts, graphics, maps)	56
	Attend meeting	57
	Prepare meeting minutes	6
	Design Public Hearings (4 in each state, 8 total mtgs)	
	Prepare handout	64
	Prepare maps, graphics, meeting materials	60
	Attend Hearings	384
	Prepare meeting minutes	56
J	**POST DESIGN PUBLIC HEARING MEETING**	
	Review and consolidate comments from Hearing	32
	Update comment database	72
	Design Post Hearing Meetings (2 mtgs total)	
	Meeting prep (agenda, handouts, graphics, maps)	24
	Attend meeting	45
	Prepare meeting minutes	6
K	**RECORD OF DECISION (ROD)**	
	Prepare draft ROD	92
	QA/QC and revisions	25
	Prepare final ROD	16
	Coordination with FHWA, FRA, NCDOT Rail, VADRPT, Core Team, Subs	26
L	**GIS SUPPORT**	
	Miscellaneous GIS mapping support	240
M	**MEETINGS**	
	Weekly Project Meetings (assume 30 meetings, 2 people/mtg)	
	Meeting prep	30
	Attend meeting	120
	Core Team Meetings (assume 23 meetings, 2 people/mtg)	
	Meeting prep (agenda, handouts, graphics, maps)	39
	Attend Meeting	104
	Prepare meeting minutes	122
	Small Group Meetings (assume 6 meetings, 2 people/mtg)	
	Meeting prep (agenda, handouts, graphics, maps)	34
	Attend meeting	48
	Prepare meeting minutes	30
N	**PROJECT ADMINISTRATION & COORDINATION**	
	Project Administration and Coordination	640
	Phone and Mail Contact	
	Maintain Hotline	16

	PROJECT DESCRIPTION: SEHSR Corridor, Richmond, VA (Main Street Station) to Raleigh, NC (Boylan Wye)	Note: Numeric values are hours
	PREPARED BY: Baker Engineering (CMY)	9.9083002
		man hours
TASK NO.	TASK DESCRIPTION	TOTAL
	Miscellaneous contacts	16
	Update and Maintain Mailing List Database	20
	Progress Reports (16)	128
	Total Hours	11845
	RATES PER HOUR	
	RAW LABOR COSTS/CATEGORY	$389,629.56
	TOTAL RAW LABOR	**$389,629.56**
	ESCALATION FACTOR (12% INCREASE OVER 2.5 YEARS)	**$436,385.11**
	OVERHEAD (LABOR BURDEN@177.16%)	**$773,099.86**
	TOTAL LABOR PLUS BURDEN	**$1,209,484.96**
	Fee (@ 9%)	**$108,853.65**
	TOTAL LABOR, OH & FEE	**$1,318,338.61**
	DIRECT EXPENSES	**$142,989.50**
	BAKER TOTAL	**$1,461,328.11**
	CONTRACTOR TOTALS	
	Gibson Engineers	**$1,440,701.43**
	Springboard Eydo	**$11,657.90**
	Michael C. Holowaty & Associates, Inc.	**$10,000.00**
	The Catena Group	**$34,475.02**
	Dovetail Cultural Resource Group	**$507,991.02**
	Moffatt & Nichol	**$83,334.57**
	Contingency (approx. 12%)	**$425,511.95**
	GRAND TOTAL	**$3,975,000.00**

DIRECT EXPENSES - Baker Engineering

PROJECT DESCRIPTION: SEHSR Corridor, Richmond, VA (Main Street Station) to Raleigh, NC (Boylan Wye)

SEHSR Phase V - Covers time period: August 15, 2009 (pending NTP) through Dec 31, 2010

PREPARED BY: Baker Engineering (CMY)

Baker Engineering

TIP NUMBER: P-3819

DATE Created: 01/29/08 Revised:

		Description	Cost/Unit		Amounts by Firm	
				Description	# of Units	Total
A	NEPA PUBLIC HEARING					
	Hearing Notification Letter					
	Copies (8.5"x11")	8.5"x11" copies	$0.04	pages	20,000	$800.00
	Copies (11"x17")	11"x17" copies	$0.10	pages	20,000	$2,000.00
	Copies (Color copies -11"x17")	11"x17" color copies	$0.50	pages	15,000	$7,500.00
	Postage	1st class postage - US Mail	$0.42	stamps	20,000	$8,400.00
	Hearing Handouts					
	Copies (8.5"x11")	8.5"x11" copies	$0.04	pages	16,000	$640.00
	Copies (11"x17")	11"x17" copies	$0.10	pages	3,200	$320.00
	Copies (Color copies -11"x17")	11"x17" color copies	$0.50	pages	3,200	$1,600.00
	Travel					
	NC Hearings (4 hearings)	Raleigh to Vance County	$0.51	miles	100	$50.50
		Raleigh to Warren County	$0.51	miles	120	$60.60
		Raleigh to Franklin County	$0.51	miles	75	$38.25
		Per Diem (4 people)	$7.50	Breakfast		
			$9.75	Lunch	4	$39.00
			$15.75	Dinner	4	$63.00
	VA Hearings (4 hearings)	Raleigh to Southside, VA (2 Hearings)	$0.51	miles	400	$202.00
		Raleigh to Petersburg, VA	$0.51	miles	250	$126.25
		Raleigh to Richmond, VA	$0.51	miles	350	$176.75
		Per Diem (4 people)	$7.50	Breakfast	4	$30.00
			$9.75	Lunch	4	$39.00
			$15.75	Dinner	4	$63.00
	Transcriptionist (VA Hearings ONLY)	Transcriptionist Service	$100.00	hour	16	$1,600.00
					Subtotal:	**$23,748.35**
B	POST NEPA HEARING MEETING					
	Miscellaneous Copies (8.5"x11")	8.5"x11" copies	$0.04	pages	200	$8.00
	Miscellaneous Copies (11"x17")	11"x17" copies	$0.10	pages	100	$10.00
	Miscellaneous Copies (Color copies -11"x17")	11"x17" color copies	$0.50	pages	100	$50.00
					Subtotal:	**$68.00**
C	RECOMMENDATION REPORT					
	Reproduction (200 copies)					
	Copies (8.5"x11")	8.5"x11" copies	$0.04	pages	8,000	$320.00
	Copies (11"x17")	11"x17" copies	$0.10	pages	400	$40.00
	Copies (Color copies -11"x17")	11"x17" color copies	$0.50	pages	1,000	$500.00
	Compact Disc (CD)	Electronic copy on CD	$0.35	CD	200	$70.00
					Subtotal:	**$930.00**
D	ADVISORY COMMITTEE MEETINGS					
	Meeting Handout/Information Packet					
	Copies (8.5"x11")	8.5"x11" copies	$0.04	pages	2,000	$80.00
	Copies (11"x17")	11"x17" copies	$0.10	pages	400	$40.00
	Copies (Color copies -11"x17")	11"x17" color copies	$0.50	pages	1,000	$500.00
	Travel					
	VA Meeting	Raleigh to Richmond	$0.51	miles	350	

DIRECT EXPENSES - Baker Engineering

PROJECT DESCRIPTION: SEHSR Corridor, Richmond, VA (Main Street Station) to Raleigh, NC (Boylan Wye)

SEHSR Phase V - Covers time period: August 15, 2009 (pending NTP) through Dec 31, 2010

PREPARED BY: Baker Engineering (CMY)

Baker Engineering

TIP NUMBER: P-3819

DATE Created: 01/29/08 Revised:

		Description	Cost/Unit		Amounts by Firm	
		Per Diem (3 people)	$7.50	Breakfast		$0.00
			$9.75	Lunch		$0.00
			$15.75	Dinner	3	$47.25
					Subtotal:	$667.25
E	MULTI-USE TRAIL					
	Copies (8.5"x11")	8.5"x11" copies	$0.04	pages		$0.00
	Copies (11"x17")	11"x17" copies	$0.10	pages		$0.00
	Copies (Color copies -11"x17")	11"x17" color copies	$0.50	pages	1,000	$500.00
					Subtotal:	$500.00
F	FEIS					
	Reproduction of FEIS (500 copies)					
	Copies (8.5"x11")	8.5"x11" copies	$0.04	pages	50,000	$2,000.00
	Copies (11"x17")	11"x17" copies	$0.10	pages	5,000	$500.00
	Copies (Color copies -11"x17")	11"x17" color copies	$0.50	pages	5,000	$2,500.00
	Compact Disc	Electronic Copy on CD	$0.35	CD	500	$175.00
	Mapbook for FEIS (250 copies)	11"x17" color copies (150 pages/mapbook)	$0.50	pages	37,500	$18,750.00
	Postage					
	FedEx Mailings	Standard Overnight Delivery	$10.00	1 package	20	$200.00
	US Post Office Mailings	Standard 1st Class Priority Mail	$4.00	1 package	100	$400.00
					Subtotal:	$24,525.00
G	SECTION 4(f) EVALUATIONS & MOAs					
	Reproduction of Section 4(f) Evaluations (6 @ 20 pages each)					
	Copies (8.5"x11")	8.5"x11" copies	$0.04	pages	120	$4.80
	Copies (11"x17")	11"x17" copies	$0.10	pages	100	$10.00
	Copies (Color copies -11"x17")	11"x17" color copies	$0.50	pages	100	$50.00
					Subtotal:	$64.80
H	UPDATE FIELD SURVEYS					
	Miscellaneous Copies (11"x17")	11"x17" copies	$0.10	pages	200	$20.00
	Natural Systems Mapbook Copies (Color copies -11"x17")	11"x17" color copies	$0.50	pages	2,000	$1,000.00
	Wetlands and Endangered Species Field Surveys					
		Travel (400 miles/wk for 4 wks/ for 2 vehicles)	$0.51	miles	3,000	$1,515.00
		Per Diem (4 people)	$7.50	Breakfast	240	$1,800.00
			$9.75	Lunch	240	$2,340.00
			$15.75	Dinner	240	$3,780.00
		Hotel (NC) - 4 people/2 per room for 30 days	$71.50	Lodging	60	$4,290.00
		Hotel (VA) - 4 people/2 per room for 30 days	$89.00	Lodging	60	$5,340.00
		GPS survey grade receiver rental (3 months)	$4,000.00	month	3	$12,000.00
	Field Verification with Agencies	Travel	$0.51	miles	600	$303.00
					Subtotal:	$35,828.00
I	PRELIMINARY PERMIT COORDINATION					
	Copies (8.5"x11")	8.5"x11" copies	$0.04	pages	200	$8.00
	Copies (11"x17")	11"x17" copies	$0.10	pages	100	$10.00
	Copies (Color copies -11"x17")	11"x17" color copies	$0.50	pages	100	$50.00

DIRECT EXPENSES - Baker Engineering

PROJECT DESCRIPTION: SEHSR Corridor, Richmond, VA (Main Street Station) to Raleigh, NC (Boylan Wye)

SEHSR Phase V - Covers time period: August 15, 2009 (pending NTP) through Dec 31, 2010

PREPARED BY: Baker Engineering (CMY)

Baker Engineering

TIP NUMBER: P-3819

DATE Created: 01/29/08 Revised:

		Description	Cost/Unit		Amounts by Firm	
					Subtotal:	$68.00
J	DESIGN PUBLIC HEARING					
	Hearing Notification Letter					
	Copies (8.5"x11")	8.5"x11" copies	$0.04	pages	20,000	$800.00
	Copies (11"x17")	11"x17" copies	$0.10	pages	20,000	$2,000.00
	Copies (Color copies -11"x17")	11"x17" color copies	$0.50	pages	15,000	$7,500.00
	Postage	1st class postage - US Mail	$0.42	stamps	20,000	$8,400.00
	Hearing Handouts					
	Copies (8.5"x11")	8.5"x11" copies	$0.04	pages	16,000	$640.00
	Copies (11"x17")	11"x17" copies	$0.10	pages	3,200	$320.00
	Copies (Color copies -11"x17")	11"x17" color copies	$0.50	pages	3,200	$1,600.00
	Travel					
	NC Hearings (4 hearings)	Raleigh to Vance County	$0.51	miles	100	$50.50
		Raleigh to Warren County	$0.51	miles	120	$60.60
		Raleigh to Franklin County	$0.51	miles	75	$38.25
		Per Diem (4 people)	$7.50	Breakfast		
			$9.75	Lunch	4	$39.00
			$15.75	Dinner	4	$63.00
	VA Hearings (4 hearings)	Raleigh to Southside, VA (2 Hearings)	$0.51	miles	400	$202.00
		Raleigh to Petersburg, VA	$0.51	miles	250	$126.25
		Raleigh to Richmond, VA	$0.51	miles	350	$176.75
		Per Diem (4 people)	$7.50	Breakfast	4	$30.00
			$9.75	Lunch	4	$39.00
			$15.75	Dinner	4	$63.00
	Transcriptionist (VA Hearings ONLY)	Transcriptionist Service	$100.00	hour	16	$1,600.00
					Subtotal:	$23,748.35
K	POST DESIGN PUBLIC HEARING MEETING					
	Miscellaneous Copies (8.5"x11")	8.5"x11" copies	$0.04	pages	200	$8.00
	Miscellaneous Copies (11"x17")	11"x17" copies	$0.10	pages	100	$10.00
	Miscellaneous Copies (Color copies -11"x17")	11"x17" color copies	$0.50	pages	100	$50.00
					Subtotal:	$68.00
L	RECORD OF DECISION (ROD)					
	Reproduction of ROD (500 copies)					
	Copies (8.5"x11")	8.5"x11" copies	$0.04	pages	50,000	$2,000.00
	Copies (11"x17")	11"x17" copies	$0.10	pages	5,000	$500.00
	Copies (Color copies -11"x17")	11"x17" color copies	$0.50	pages	5,000	$2,500.00
	Compact Disc	Electronic Copy on CD	$0.35	CD	500	$175.00
	Postage					
	FedEx Mailings	Standard Overnight Delivery	$10.00	1 package	20	$200.00
	US Post Office Mailings	Standard 1st Class Priority Mail	$4.00	1 package	100	$400.00
					Subtotal:	$5,775.00
M	FONSI FOR MULTI-USE TRAIL					
	Reproduction of FONSI (500 copies)					
	Copies (8.5"x11")	8.5"x11" copies	$0.04	pages	10,000	$400.00
	Copies (11"x17")	11"x17" copies	$0.10	pages	1,000	$100.00

DIRECT EXPENSES - Baker Engineering

PROJECT DESCRIPTION: SEHSR Corridor, Richmond, VA (Main Street Station) to Raleigh, NC (Boylan Wye)

SEHSR Phase V - Covers time period: August 15, 2009 (pending NTP) through Dec 31, 2010

PREPARED BY: Baker Engineering (CMY)

Baker Engineering

TIP NUMBER: P-3819

DATE Created: 01/29/08 Revised:

		Description	Cost/Unit		Amounts by Firm	
	Copies (Color copies -11"x17")	11"x17" color copies	$0.50	pages	5,000	$2,500.00
	Compact Disc	Electronic Copy on CD	$0.35	CD	500	$175.00
	Mapbook for FONSI (250 copies)	11"x17" color copies (150 pages/mapbook)	$0.50	pages	37,500	$18,750.00
	Postage					
	FedEx Mailings	Standard Overnight Delivery	$10.00	1 package	20	$200.00
	US Post Office Mailings	Standard 1st Class Priority Mail	$4.00	1 package	100	$400.00
					Subtotal:	**$22,525.00**
N	GIS SUPPORT					
	Miscellaneous Copies (8.5"x11")	8.5"x11" copies	$0.04	pages		$0.00
	Miscellaneous Copies (11"x17")	11"x17" copies	$0.10	pages		$0.00
	Miscellaneous Copies (Color copies -11"x17")	11"x17" color copies	$0.50	pages	2,000	$1,000.00
					Subtotal:	**$1,000.00**
O	MEETINGS					
	Small Group & Core Team Meetings	8.5"x11" copies	$0.04	pages	1,000	$40.00
		11"x17" copies	$0.10	pages	500	$50.00
		11"x17" color copies	$0.50	pages	2,000	$1,000.00
	Travel					
	Small Group Meetings (3 mtgs in VA, 3 people/mtg)	Raleigh to Petersburg, VA	$0.51	miles	750	$378.75
		Per Diem (3 people)	$7.50	Breakfast		$0.00
			$9.75	Lunch		$0.00
			$15.75	Dinner		$0.00
					Subtotal:	**$1,468.75**
P	MISCELLANEOUS					
	FedEx Mailings	Standard Overnight Delivery	$10.00	1 package	20	$200.00
	US Post Office Mailings	Standard 1st Class Priority Mail	$4.00	1 package	20	$80.00
	The Conference Depot Calling Service	3rd party Conference Call Service used for SEHSR Core Team	$75.00	Core Team Meeting	23	$1,725.00
					Subtotal:	**$2,005.00**
					Totals	**$142,989.50**

	PROJECT DESCRIPTION: SEHSR Corridor, Richmond, VA (Main Street Station) to Raleigh, NC (Boylan Wye)	SEHSR Phase V Covers time period: August 15, 2009 (pending NTP) through Dec 31, 2010 values are hours						
	PREPARED BY: Gibson Engineers (GMG)	DATE Created: 1/29/08 Revised:						9.9083002
		GIBSON ENGINEERS						
TASK	TASK DESCRIPTION	Principal	Project Manager	Design Engineer	Technician	Traffic Engineer	Admin	TOTAL
A	**NEPA Public Hearing**							
NC	Map Preparation							
	- Prepare Base Sheets	8	22	30	60			120.0
	- Label features	4	16	40	60			120.0
	- Prepare Typical Sections		4		8			12.0
	- Build Shapes for Shading (3 Corridors)	4	16	20	60			100.0
	- Prepare Information Handout for Map Review	2	4	8	8			22.0
	Attend Map Review	7	7					14.0
	Revise Map based on Review Comments	4	12	16	16			48.0
	Attend Public Hearings (4)	40	40	40	40			160.0
	Plotting Hearing Maps		16		34			50.0
	Responses to the Public	8	8	8	16			40.0
VA	Map Preparation							0.0
	- Prepare Base Sheets	10	26	36	72			144.0
	- Label features	4	20	48	72			144.0
	- Prepare Typical Sections		4		8			12.0
	- Build Shapes for Shading (3 Corridors)	6	20	24	72			122.0
	- Prepare Information Handout for Map Review	2	4	8	8			22.0
	Attend Map Review	12	12					24.0
	Revise Map based on Review Comments	4	12	16	16			48.0
	Attend Public Hearings (4)	56	56	56	56			224.0
	Plotting Hearing Maps		20		40			60.0
	Responses to the Public	10	10	10	20			50.0
B	**Post NEPA Public Hearing**							
NC	Compile NEPA Hearing Comments	4	4	8				16.0
	Address Comments	12	12					24.0
	Attend Post Hearing Meeting	5	5					10.0
VA	Compile NEPA Hearing Comments	4	4	8				16.0
	Address Comments	15	15					30.0
	Attend Post Hearing Meeting	10	10					20.0
C	**Advisory Meetings**							

	PROJECT DESCRIPTION: SEHSR Corridor, Richmond, VA (Main Street Station) to Raleigh, NC (Boylan Wye)	SEHSR Phase V Covers time period: August 15, 2009 (pending NTP) through Dec 31, 2010 values are hours						
	PREPARED BY: Gibson Engineers (GMG)	DATE Created: 1/29/08 Revised:						9.9083002
		GIBSON ENGINEERS						
TASK	TASK DESCRIPTION	Principal	Project Manager	Design Engineer	Technician	Traffic Engineer	Admin	TOTAL
NC	Meeting Prep	2	2					4.0
	Attend Meeting	5	5					10.0
VA	Meeting Prep	2	2					4.0
	Attend Meeting	10	10					20.0
D	**Roadway Detour Designs**							
NC	Road Alignments							0.0
	Existing Horizontal Alignments							0.0
	Existing Vertical Alignments		5	15	15			35.0
	Existing Cross-Sections		12	20	20			52.0
	Horizontal Alignments	30	60	50				140.0
	Vertical Alignments	30	60	50				140.0
	Proposed Cross-sections	5	15	15				35.0
	Create Patterns		4	10	4			18.0
	Create Shapes	2	12	15	6			35.0
	Create Geopak Input Files	6	22	24				52.0
	Proposed Construction Limits		4	4	10			18.0
	Prepare Right of Way Limits	4	12	12	24			52.0
	Quality Assurance/Quality Control	32	20					52.0
VA	Road Alignments							0.0
	Existing Horizontal Alignments							0.0
	Existing Vertical Alignments		5	15	15			35.0
	Existing Cross-Sections		12	20	20			52.0
	Horizontal Alignments	30	60	50				140.0
	Vertical Alignments	30	60	50				140.0
	Proposed Cross-sections	5	15	15				35.0
	Create Patterns		4	10	4			18.0
	Create Shapes	2	12	15	6			35.0
	Create Geopak Input Files	6	22	24				52.0
	Proposed Construction Limits		4	4	10			18.0
	Prepare Right of Way Limits	4	12	12	24			52.0
	Quality Assurance/Quality Control	32	20					52.0

	PROJECT DESCRIPTION: SEHSR Corridor, Richmond, VA (Main Street Station) to Raleigh, NC (Boylan Wye)	SEHSR Phase V Covers time period: August 15, 2009 (pending NTP) through Dec 31, 2010 values are hours						
	PREPARED BY: Gibson Engineers (GMG)	DATE Created: 1/29/08 Revised:						9.9083002
		GIBSON ENGINEERS						
TASK	TASK DESCRIPTION	Principal	Project Manager	Design Engineer	Technician	Traffic Engineer	Admin	TOTAL
E	**Preliminary Design Modifications**							
NC	Design Modifications (15)	48	100	100	40			288.0
VA	Design Modifications (15)	48	100	100	40			288.0
F	**Design Cost Estimates**							
NC	Update Design Cost Estimates	20	80	100	120			320.0
NC	Develop Greenway Estimates	5	20	25	30			80.0
VA	Update Design Cost Estimates	30	100	170	180			480.0
VA	Develop Greenway Estimates	10	40	50	60			160.0
G	**Preliminary Permitting Process**							
NC	Meet with Agencies to discuss Permitting	9	9					18.0
	Minor Design Revisions (10)	32	64	64	32			192.0
	Coordination	4	4					8.0
VA	Meet with Agencies to discuss Permitting	13	13					26.0
	Minor Design Revisions (10)	32	64	64	32			192.0
	Coordination	4	4					8.0
H	**Develop Map Act Maps (4 Counties)**							
NC	Layout Base Sheets	40	160	240	800			1240.0
	Set up Plan Sheet		4		4			8.0
	Add Right of Way Monuments and Labels	100	200	300				600.0
	Rotate and scale property owner text	2	8	8	144			162.0
	Add Parcels Numbers	8	16	16	40			80.0
	Complete Parcel Index Sheets	8	16	16	40			80.0
	Prepare Title Sheets	2	8		30			40.0
								0.0
I	**Design Public Hearings/ Map Act Hearings**							
NC	Map Preparation							0.0
	- Prepare Base Sheets	16	44	60	120			240.0
	- Rotate and scale property owner text	2	4	16	24			46.0
	- Label features	6	24	50	80			160.0

	PROJECT DESCRIPTION: SEHSR Corridor, Richmond, VA (Main Street Station) to Raleigh, NC (Boylan Wye)	SEHSR Phase V Covers time period: August 15, 2009 (pending NTP) through Dec 31, 2010 values are hours						
	PREPARED BY: Gibson Engineers (GMG)	DATE Created: 1/29/08 Revised:						9.9083002
		GIBSON ENGINEERS						
TASK	TASK DESCRIPTION	Principal	Project Manager	Design Engineer	Technician	Traffic Engineer	Admin	TOTAL
	- Prepare Typical Sections		4		8			12.0
	- Build Shapes for Shading (3 Corridors)	20	40	60	360			480.0
	- Prepare Information Handout for Map Review	2	4	8	8			22.0
	Attend Map Review	7	7					14.0
	Revise Map based on Review Comments	4	12	16	16			48.0
	Attend Public Hearings (4)	40	40	40	40			160.0
	Plotting Hearing Maps		32		64			96.0
	Responses to the Public	8	8	8	16			40.0
VA	Map Preparation							0.0
	- Prepare Base Sheets	20	52	72	144			288.0
	- Rotate and scale property owner text	4	10	10	172			196.0
	- Add Parcels Numbers	10	20	20	48			98.0
	- Label features	8	28	60	96			192.0
	- Prepare Typical Sections		4		8			12.0
	- Build Shapes for Shading selected corridor	20	94	112	360			586.0
	- Prepare Information Handout for Map Review	2	4	8	8			22.0
	Attend Map Review	12	12					24.0
	Revise Map based on Review Comments	6	12	18	12			48.0
	Attend Public Hearings (4)	56	56	56	56			224.0
	Plotting Hearing Maps		40		80			120.0
	Responses to the Public	10	10	10	20			50.0
J	**Post Design Public Hearing**							
NC	Compile Hearing Comments	8	8	16				32.0
	Address Comments	16	16					32.0
	Attend Post Hearing Meeting	5	5					10.0
VA	Compile Hearing Comments	8	8	16				32.0
	Address Comments	16	16					32.0
	Attend Post Hearing Meeting	10	10					20.0
K	**Project Coordination and Administrative Tasks**							
NC	Monthly Invoicing and Progress Reports	4	8				8	20.0

	PROJECT DESCRIPTION: SEHSR Corridor, Richmond, VA (Main Street Station) to Raleigh, NC (Boylan Wye)	SEHSR Phase V Covers time period: August 15, 2009 (pending NTP) through Dec 31, 2010 values are hours						
	PREPARED BY: Gibson Engineers (GMG)	DATE Created: 1/29/08 Revised:						9.9083002
		GIBSON ENGINEERS						
TASK	TASK DESCRIPTION	Principal	Project Manager	Design Engineer	Technician	Traffic Engineer	Admin	TOTAL
	Weekly Progress Meetings	138						138.0
	Small Group Meetings (6)	54	54					108.0
	Core Team Meetings	40.5	40.5					81.0
	General Coordination	215	105					320.0
VA	Monthly Invoicing and Progress Reports	4	8				8	20.0
	Weekly Progress Meetings	138						138.0
	Small Group Meetings (6)	78	78					156.0
	Core Team Meetings	40.5	40.5					81.0
	General Coordination	215	105					320.0
	Total Hours	**2126**	**2923**	**2715**	**4156**	**0**	**16**	**11936**
	RATES PER HOUR	$48.00	$36.40	$27.25	$20.50	#####	$16.50	
	RAW LABOR COSTS/CATEGORY	$102,048.00	$106,397.20	$73,983.75	$85,198.00	$0.00	$264.00	$367,890.95
	TOTAL RAW LABOR							**$367,890.95**
	ESCALATION (12% over 2.5 yrs)							**$412,037.86**
	OVERHEAD (LABOR BURDEN@180.24%)							**$742,657.05**
	TOTAL LABOR PLUS BURDEN							**$1,154,694.91**
	Fee (@ 9%)							**$103,922.54**
	TOTAL LABOR, OH & FEE							**$1,258,617.45**
	DIRECT EXPENSES							**$180,833.15**
	COST OF CAPITAL (0.34%)							**$1,250.83**
	GRAND TOTAL							**$1,440,701.43**

DIRECT EXPENSES - GIBSON ENGINEERS

PROJECT DESCRIPTION: SEHSR Corridor, Richmond, VA (Main Street Station) to Raleigh, NC (Boylan Wye)

SEHSR Phase V - Covers time period: August 15, 2009 (pending NTP) through Dec 31, 2010

PREPARED BY: Gibson Engineers GMG

Gibson Engineers

TIP NUMBER: P-3819

DATE Created: 1/29/08 Revised:

		Units	Cost/Unit		Amounts by Firm		
				Description	# of Units	Total	its
A	NEPA Public Hearing						
NC	Map Review Meeting in Raleigh (1 Meeting)		1 $0.51	Miles	40	$20.20	
	NEPA Public Hearing (4 Hearings)		4 $0.51	Miles	150	$303.00	
	Per Diem:	The day is purposed to be extended by more than 4 hours.		Breakfast		$0.00	
			$7.50	Breakfast		$0.00	
		4 People	4 $9.75	Lunch	4	$156.00	
		4 People	4 $15.75	Dinner	4	$252.00	
			$71.50	Lodging		$0.00	
	Reproduction					$0.00	
		NEPA Public Hearing Map Review Set (2 Sets)	2 $128.00	34"X120"	10	$2,560.00	28.33 sf X 4
		NEPA Public Hearing Maps (17 Sets)	17 $128.00	34"X120"	10	$21,760.00	
					Subtotal:	$25,031.00	
VA	Map Review Meeting in Virginia (1 Meeting)		1 $0.51	Miles	40	$20.20	
	NEPA Public Hearing (4 Hearings)		4 $0.51	Miles	400	$808.00	
	Per Diem:	The day is purposed to be extended by more than 4 hours.		Breakfast		$0.00	
			4 $7.50	Breakfast	4	$120.00	
			4 $9.75	Lunch	4	$156.00	
			4 $15.75	Dinner	4	$252.00	
			4 $89.00	Lodging	4	$1,424.00	
	Reproduction					$0.00	
		NEPA Public Hearing Map Review Set (2 Sets)	2 $128.00	34"X120"	13	$3,328.00	
		NEPA Public Hearing Maps (17 Sets)	17 $128.00	34"X120"	13	$28,288.00	
					Subtotal:	$34,376.00	
B	Post NEPA Public Hearing						
NC	Post Hearing Meeting in Raleigh (1 Meeting)		1 $0.51	Miles	40	$20.20	
VA	Post Hearing Meeting in Virginia (1 Meeting)		1 $0.51	Miles	400	$202.00	
					Subtotal:	$222.20	
C	Advisory Meetings						
NC	Advisory Meeting in Raleigh (1 Meeting)		1 $0.51	Miles	40	$20.20	
VA	Advisory Meeting in Virginia (1 Meeting)		1 $0.51	Miles	400	$202.00	
					Subtotal:	$222.20	
D	Multi Use Path						
						$0.00	
						$0.00	
						$0.00	
					Subtotal:	$0.00	
E	Roadway Detour Designs						
						$0.00	

DIRECT EXPENSES - GIBSON ENGINEERS

PROJECT DESCRIPTION: SEHSR Corridor, Richmond, VA (Main Street Station) to Raleigh, NC (Boylan Wye)

SEHSR Phase V - Covers time period: August 15, 2009 (pending NTP) through Dec 31, 2010

PREPARED BY: Gibson Engineers GMG

Gibson Engineers

TIP NUMBER: P-3819

DATE Created: 1/29/08 Revised:

		Units	Cost/Unit			Amounts by Firm	
							$0.00
							$0.00
						Subtotal:	$0.00
F	Preliminary Design Modifications						
							$0.00
							$0.00
							$0.00
						Subtotal:	$0.00
G	Design Cost Estimates						
							$0.00
							$0.00
							$0.00
						Subtotal:	$0.00
H	Preliminary Permitting Process						
NC	Agency Meeting in Raleigh (1 Meeting)		1	$0.51	Miles	40	$20.20
VA	Agency Meeting in Virginia (1 Meeting)		1	$0.51	Miles	400	$202.00
						Subtotal:	$222.20
I	Develop Map Act Maps						
	Reproduction						
		Map Act Maps Review Sets (2 Sets)	2	$1.40	18"x20"	155	$434.00
		Map Act Maps Set (6 Sets)	10	$1.40	18"x20"	155	$2,170.00
						Subtotal:	$0.00
J	Design Public Hearings/ Map Act Hearings						
NC	Map Review Meeting in Raleigh (1 Meeting)		1	$0.51	Miles	40	$20.20
	Public Hearing (4 Hearings)		4	$0.51	Miles	150	$303.00
	Per Diem:	The day is purposed to be extended by more than 4 hours.			Breakfast		$0.00
				$7.50	Breakfast		$0.00
		4 People	4	$9.75	Lunch	4	$156.00
		4 People	4	$15.75	Dinner	4	$252.00
				$71.50	Lodging		$0.00
	Reproduction						$0.00
		Public Hearing Map Review Set (2 Sets)	2	$128.00	34"X120"	20	$5,120.00
		Public Hearing Maps (17 Sets)	17	$128.00	34"X120"	20	$43,520.00
						Subtotal:	$49,351.00
VA	Map Review Meeting in Virginia (1 Meeting)		1	$0.51	Miles	400	$202.00
	NEPA Public Hearing (4 Hearings)		4	$0.51	Miles	400	$808.00
	Per Diem:	The day is purposed to be extended by more than 4 hours.			Breakfast		$0.00
			4	$7.50	Breakfast	4	$120.00
			4	$9.75	Lunch	4	$156.00
			4	$15.75	Dinner	4	$252.00
			4	$89.00	Lodging	4	$1,424.00

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((18*20)/144

28.33 sf X 4

DIRECT EXPENSES - GIBSON ENGINEERS

PROJECT DESCRIPTION: SEHSR Corridor, Richmond, VA (Main Street Station) to Raleigh, NC (Boylan Wye)	SEHSR Phase V - Covers time period: August 15, 2009 (pending NTP) through Dec 31, 2010
PREPARED BY: Gibson Engineers GMG	Gibson Engineers
TIP NUMBER: P-3819	
DATE Created: 1/29/08 Revised:	

		Units	Cost/Unit			Amounts by Firm	
	Reproduction						$0.00
		NEPA Public Hearing Map Review Set (2 Sets)	2	$128.00	34"X120"	27	$6,912.00
		NEPA Public Hearing Maps (17 Sets)	17	$128.00	34"X120"	27	$58,752.00
						Subtotal:	$68,424.00
K	Post Design Public Hearing						
NC	Post Hearing Meeting in Raleigh (1 Meeting)		1	$0.51	Miles	40	$20.20
VA	Post Hearing Meeting in Virginia (1 Meeting)		1	$0.51	Miles	400	$202.00
						Subtotal:	$222.20
L	Project Coordination and Administrative Tasks						
NC	Weekly Progress Meetings (34)		34	$0.51	Miles	40	$686.80
	Small Group Meetings (6)		6	$0.51	Miles	150	$454.50
	MultiUse Path Meetings (3)		3	$0.51	Miles	150	$227.25
	MultiUse Path Field Trip (1)		1	$0.51	Miles	150	$75.75
	Core Team Meetings (23)		23	$0.51	Miles	40	$464.60
VA	Weekly Progress Meetings (35)		35	$0.51	Miles	40	$707.00
	Small Group Meetings (6)		6	$0.51	Miles	300	$909.00
	MultiUse Path Meetings (3)		3	$0.51	Miles	300	$454.50
	MultiUse Path Field Trip (1)		1	$0.51	Miles	450	$227.25
	Core Team Meetings (23)		23	$0.51	Miles	40	$464.60
						Subtotal:	$2,762.35
						Totals	$180,833.15

TOTAL

	PROJECT DESCRIPTION: SEHSR Corridor, Richmond, VA (Main Street Station) to Raleigh, NC (Boylan Wye)	SEHSR Phase V	Note: Numeric values are hours
	PREPARED BY: Michael C. Holowaty & Associates (MCH)	DATE Created: 1/29/08 Revised:	**9.9083002**
	Covers time period: August 15, 2009 (pending NTP) through Dec 31, 2010	**MICHAEL C. HOLOWATY & ASSOCIATES**	
TASK NO.	TASK DESCRIPTION	Mike Holowaty **PRINCIPAL**	**TOTAL**
A	**Review of the preliminary engineering designs**		
	Review and comment on engineering designs	28	28
	Review and comment on operational issues	28	28
B	**Participation in coordination activities**		
	Core Team Monthly Meetings - 12 at 1.25 hours	15	15
	Core Team Coordination Meetings - 3 at 3 hours	9	9
	Total Hours	**80**	**80**
	RATES PER HOUR	$125.00	
	RAW LABOR COSTS/CATEGORY	$10,000.00	$10,000.00
	TOTAL RAW LABOR		**$10,000.00**
	OVERHEAD (LABOR BURDEN@1.00%)		**$0.00**
	TOTAL LABOR PLUS BURDEN		**$10,000.00**
	Fee (@ 0%)		**$0.00**
	TOTAL LABOR, OH & FEE		**$10,000.00**
	DIRECT EXPENSES		**$0.00**
	GRAND TOTAL		**$10,000.00**

	PROJECT DESCRIPTION: SEHSR Corridor, Richmond, VA (Main Street Station) to Raleigh, NC (Boylan Wye)	SEHSR Phase V		Note: Numeric values are hours
	PREPARED BY: Springboard Eydo (GDS)	DATE Created: 1/29/08 Revised:		9.9083002
	Covers time period: August 15, 2009 (pending NTP) through Dec 31, 2010	SPRINGBOARD EYDO		
TASK NO.	TASK DESCRIPTION	Garold Smith **Project Manager**	Ben Woodward **Creative Director**	**TOTAL**
A	**Support Services for NCDOT Rail**			
	Support Services	40	40	80
B	**Public Outreach**			
	Public Outreach	40	40	
	Total Hours	**80**	**80**	**160**
	FLAT RATE (Negotiated rate with David Foster)	$80.00	$60.00	
	RAW LABOR COSTS/CATEGORY	$6,400.00	$4,800.00	$11,200.00
	DIRECT EXPENSES			**$457.90**
	GRAND TOTAL			**$11,657.90**

DIRECT EXPENSES - EYDO, INC.

PROJECT DESCRIPTION: SEHSR Corridor, Richmond, VA (Main Street Station) to Raleigh, NC (Boylan Wye)

SEHSR Phase V - Covers time period: August 15, 2009 (pending NTP) through Dec 31, 2010

PREPARED BY: Springboard Eydo (GDS)

TIP NUMBER: P-3819

DATE Created: 1/29/08 Revised:

		Units	Cost/Unit		Amounts by Firm	
				Description	# of Units	Total
A	Support Services for NCDOT Rail					
	Montly Invoicing					
	Miscellaneous Copies (8.5"x11")	8.5"x11" copies	$0.04	pages	50	$2.00
	Miscellaneous Copies (11"x17")	11"x17" copies	$0.10	pages	50	$5.00
	Miscellaneous Copies (Color copies -11"x17")	11"x17" color copies	$0.50	pages	50	$25.00
	Mileage (assume 10 meetings @ 39 miles/meeting)	miles	$0.51	miles	390	$196.95
					Subtotal:	**$228.95**
B	Public Outreach					
	Montly Invoicing					
	Miscellaneous Copies (8.5"x11")	8.5"x11" copies	$0.04	pages	50	$2.00
	Miscellaneous Copies (11"x17")	11"x17" copies	$0.10	pages	50	$5.00
	Miscellaneous Copies (Color copies -11"x17")	11"x17" color copies	$0.50	pages	50	$25.00
	Mileage (assume 10 meetings @ 39 miles/meeting)	miles	$0.51	miles	390	$196.95
					Subtotal:	**$228.95**
					Totals	**$457.90**

	PROJECT DESCRIPTION: SEHSR Corridor, Richmond, VA (Main Street Station) to Raleigh, NC (Boylan Wye)	SEHSR Phase V - Covers time period: August 15, 2009 (pending NTP) through Dec 31, 2010						Note: Numeric values are hours
	PREPARED BY: The Catena Group. (MGW)	DATE Created: 1/29/08 Revised:						9.9083002
		THE CATENA GROUP						
TASK NO.	TASK DESCRIPTION	Savidge **Lead Aquatic Biologist**	Dickinson **Aquatic Biologist**	Sheats **Aquatic Biologist**	Garriock **Aquatic Biologist**	Hartsell **Aquatic Biologist**	Wood **Principal**	**TOTAL**
A	**Presurvey Tasks**							
	Review Listed Species List		4					4
	Coordinate w/ state & federal agencies on survey agenda	2	2					4
B	**Aquatic Surveys (Includes Travel)**							
	Neuse River	8	8	8				24
	Tar River	8	8	8				24
	Sappony Creek	8	8	8				24
	Nottoway River	12	12	12				36
	Appomatox River	12	12	12				36
	Meherrin River	12	12	12				36
	James River	14	14	14	14	14		70
C	**Report Preparation**							
	Update Draft Report	15	35		6		5	61
	Update Final Report	2	4		2		1	9
D	**Administration**							
	Coordinate w/ state & federal agencies on survey results	8						
	Monthly Invoicing & Progress Reports		4				4	8
	General coordination (Rail Unit, Baker, internal staff, etc.)	4	2				4	10
	Total Hours	**105**	**125**	**74**	**22**	**14**	**14**	**354**
	RATES PER HOUR	$38.47	$26.68	$20.68	$24.28	$15.87	$43.27	
	RAW LABOR COSTS/CATEGORY	$4,039.35	$3,335.00	$1,530.32	$534.16	$222.18	$605.78	$10,266.79
	TOTAL RAW LABOR							**$10,266.79**
	ESCALATION FACTOR (12% INCREASE OVER 2.5 YEARS)							**$11,498.80**
	OVERHEAD (LABOR BURDEN@152.0%)							**$17,478.18**
	TOTAL LABOR PLUS BURDEN							**$28,976.99**
	Fee (@ 9%)							**$2,607.93**
	TOTAL LABOR, OH & FEE							**$31,584.92**
	DIRECT EXPENSES							**$2,890.10**
	GRAND TOTAL							**$34,475.02**

DIRECT EXPENSES - THE CATENA GROUP

PROJECT DESCRIPTION: SEHSR Corridor, Richmond, VA (Main Street Station) to Raleigh, NC (Boylan Wye)

SEHSR Phase V - Covers time period: August 15, 2009 (pending NTP) through Dec 31, 2010

PREPARED BY: The Catena Group (MGW)

TIP NUMBER: P-3819

DATE Created: 1/29/08 Revised:

		Units	Cost/Unit			
				Description	*# of Units*	Total
A	**Monthly Invoicing**					
	Miscellaneous Copies (8.5"x11")	8.5"x11" copies	$0.04	pages	500	$20.00
	Miscellaneous Copies (11"x17")	11"x17" copies	$0.10	pages	0	$0.00
	Miscellaneous Copies (Color copies -11"x17")	11"x17" color copies	$0.50	pages	0	$0.00
					Subtotal:	**$20.00**
B	**Aquatic Surveys**					
	Neuse River	mileage	$0.49		100	$48.50
	Tar River	mileage	$0.49		100	$48.50
	Sappony Creek	mileage	$0.49		360	$174.60
	Nottoway River	mileage	$0.49		360	$174.60
	Appomatox River	mileage	$0.49		420	$203.70
	Manharrin River	mileage	$0.49		420	$203.70
	James River	mileage	$0.49		500	$242.50
					Subtotal:	**$1,096.10**
C	**Aquatic Surveys**					
	Sappony Creek	DOT out of state per diem	$112.00	per person	3	$336.00
	Nottoway River	DOT out of state per diem	$112.00	per person	3	$336.00
	Appomatox River	DOT out of state per diem	$112.00	per person	3	$336.00
	Manharrin River	DOT out of state per diem	$112.00	per person	3	$336.00
	James River	DOT out of state per diem	$112.00	per person	5	$560.00
					Subtotal:	**$1,344.00**
D	**James River Surveys**					
		Boat Use / Fuel	$150.00	per day	2	$300.00
		Air Tanks	$8.00	per fill	10	$80.00
		Misc Equipment	$50.00		1	$50.00
					Subtotal:	**$430.00**
					Totals	**$2,890.10**

	PROJECT DESCRIPTION: SEHSR Corridor, Richmond, VA (Main Street Station) to Raleigh, NC (Boylan Wye)	Attach.C-Cost_Task list.xls						
		SEHSR Phase V	Covers time period: August 15, 2009 (pending NTP) through Dec 31, 2010					Note: Numeric values are hours
	PREPARED BY: Dovetail Cultural Resources (MC)	DATE Created: 1/29/08	Revised:					9.9083002
		Dovetail Cultural Resources						
TASK NO.	TASK DESCRIPTION	Mike Carmody Principal	Kerri Barile Principal	Sean Maroney Architectural Historian	Kerry Schamel-Gonzalez Project Archaeologist	Crew Chief	Staff Preservation Tech	Staff Archaeological Tech	TOTAL
A	**Battlefield Delineation Studies (4)**								
	Fieldwork			96			96		192
	Research			64			64		128
	Report		16	128	80		64		288
	Coordination		40	16			8		64
B	**Nautical Survey (included as a direct expense)**								
C	**Geomorphic Analysis (included as a direct expense)**								
D	**Phase II Archaeological Studies (9)**								
	Fieldwork	288	288		576	576		1728	3456
	Research				180			180	360
	Laboratory		72			288		288	648
	Report		72		504	216		504	1296
	Coordination		60		36				96
E	**MOA negotiation and production and 4(f) Evaluations**								
	Meetings- 4 meetings @ 8 hours each	32					32		64
	Coordination	16					16		32
	MOA Production	8	80					8	96
	4(f) Evaluations	304	304						608
	Insert subtask name								0
F	**Project Coordination and Adminstrative Tasks**								
	Invoicing		32						32
	Monthly Progress Reports	32	32						64
	Mailings							16	16
	Kick-off Meeting	4	4						8
	General Coordination	16	16						32
	Total Hours	**700**	**1016**	**304**	**1376**	**1080**	**280**	**2724**	**7480**
	RATES PER HOUR	$19.20	$24.99	$16.00	$17.99	$13.00	$12.00	$13.00	
	RAW LABOR COSTS/CATEGORY	$13,440.00	$25,389.84	$4,864.00	$24,754.24	$14,040.00	$3,360.00	$35,412.00	$121,260.08
	TOTAL RAW LABOR								**$121,260.08**
	ESCALATION FACTOR (12% INCREASE OVER 2.5 YEARS)								**$135,811.29**
	OVERHEAD (LABOR BURDEN@132.53%)								**$179,990.70**
	TOTAL LABOR PLUS BURDEN								**$315,801.99**
	Fee (@ 9%)								**$28,422.18**
	TOTAL LABOR, OH & FEE								**$344,224.17**
	DIRECT EXPENSES								**$163,766.85**
	GRAND TOTAL								**$507,991.02**

DIRECT EXPENSES - Dovetail Cultural Resource Group

PROJECT DESCRIPTION: SEHSR Corridor, Richmond, VA (Main Street Station) to Raleigh, NC (Boylan Wye)

SEHSR Phase V - Covers time period: August 15, 2009 (pending NTP) through Dec 31, 2010

PREPARED BY: Dovetail Cultural Group (MC)

Dovetail Cultural Resource Group

TIP NUMBER: P-3819

DATE Created: 1/29/08 Revised:

		Units	Cost/Unit		Amounts by Firm		C&B
				Description	# of Units	Total	#0f Units
A	**Battlefield Delineation Study**						
	Mileage		$0.485		800	$388.00	
	Lodging		$89.00		16	$1,424.00	500
	Per Diem		$34.00		20	$680.00	100
	Miscellaneous Copies (8.5"x11") - Black and White	8.5"x11" copies - Black and White	$0.10		400	$40.00	
	Miscellaneous Copies (8.5"x11") - Color	8.5"x11" copies - Color	$1.00		50	$50.00	
	Postage		$10.00		20	$200.00	
	Final Report		$5.00		40	$200.00	0
	Final Report - CD		$2.00		8	$16.00	
	Certified Mail		$7.25		40	$290.00	
					Subtotal:	**$3,288.00**	
B	**Geomorpholical Study**						
	Geomorpholical Study		$26,000.00		1	$26,000.00	500
						$0.00	100
						$0.00	
					Subtotal:	**$26,000.00**	
C	**Underwater Surveys**						
	James Crossing		$40,000.00		1	$40,000.00	
	Appamattox Crossing I		$30,000.00		1	$30,000.00	
	Appamattox Crossing II		$30,000.00		1	$30,000.00	
					Subtotal:	**$100,000.00**	
D	**Phase II Archaeological Studies**						
	Mileage		$0.485		2,880	$1,396.80	
	Lodging		$89.00		216	$19,224.00	
	Per Diem		$34.00		252	$8,568.00	
	Miscellaneous Copies (8.5"x11") - Black and White	8.5"x11" copies - Black and White	$0.10		900	$90.00	
	Miscellaneous Copies (8.5"x11") - Color	8.5"x11" copies - Color	$1.00		90	$90.00	
	Final Report		$5.00		90	$450.00	
	Final Report - CD		$2.00		18	$36.00	
	Curation		$350.00		9	$3,150.00	
	Postage		$10.00		18	$180.00	
	Certified Mail		$7.25		18	$130.50	
					Subtotal:	**$33,315.30**	
E	**MOA negotiation and production and 4(f) Evaluations**						
	Miscellaneous Copies (8.5"x11) Black and White	8.5"x11" copies - Black and White	$0.10		1,050	$105.00	
	Miscellaneous Copies (8.5"x11) Color	8.5"x11" copies - Color	$1.00		215	$215.00	
	Postage		$10.00		75	$750.00	
					Subtotal:	**$1,070.00**	
F	**Project Coordination and Administrative Tasks**						
	Miscellaneous Copies (8.5"x11") Black and White	8.5"x11" copies - Black and White	$0.10		48	$4.80	
	Miscellaneous Copies (8.5"x11") Color	8.5"x11" copies - Color	$1.00		16	$16.00	
	Mileage		$0.485		150	$72.75	
					Subtotal:	**$93.55**	
					Totals	**$163,766.85**	

	PROJECT DESCRIPTION: SEHSR Corridor, Richmond, VA (Main Street Station) to Raleigh, NC (Boylan Wye)	SEHSR Phase V		Note: Numeric values are hours
	PREPARED BY: Moffatt & Nichol (WH)	DATE Created: 1/29/08 Revised:		9.9083002
	Covers time period: August 15, 2009 (pending NTP) through Dec 31, 2010	MOFFATT & NICHOL		
TASK NO.	TASK DESCRIPTION	Wayne Hyatt, Jr., P.E. **Sr. Rail Engineer**	Julie Hunt, AICP **NEPA Planner**	**TOTAL**
A	**Design Coordination**			
	Engineering Support	40		40
B	**Core Team Participation**			
	Meeting Participation	36		36
C	**Support Services**			
	Environmental Support		520	520
	Total Hours	**76**	**520**	**596**
	RATES PER HOUR	$42.00	$42.00	
	RAW LABOR COSTS/CATEGORY	$3,192.00	$21,840.00	$25,032.00
	TOTAL RAW LABOR			**$25,032.00**
	ESCALATION FACTOR (12% INCREASE OVER 2.5 YEARS)			**$28,035.84**
	OVERHEAD (LABOR BURDEN@172.70%)			**$48,417.90**
	TOTAL LABOR PLUS BURDEN			**$76,453.74**
	Fee (@ 9%)			**$6,880.84**
	TOTAL LABOR, OH & FEE			**$83,334.57**
	DIRECT EXPENSES			**$0.00**
	GRAND TOTAL			**$83,334.57**